

WOOD PELLETS

Installation Instructions

# BioWIN XL

Wood pellet boiler

Output Range: 35, 45, 60 kW

windhager

HEAT WITH VISION



## **USER MANUAL FOR INDEPENDENT PELLET or CHIP FIRED BOILERS**

### **SUPPLEMENTARY INSTALLATION INSTRUCTIONS FOR THE UK MARKET TO BE READ IN CONJUNCTION WITH THOSE IN THE INSTRUCTION BOOKLET**

#### **READ THE INSTRUCTION BOOKLET AND THESE SUPPLEMENTARY INSTRUCTIONS CAREFULLY BEFORE INSTALLATION**

These instructions together with those in the instruction booklet cover the basic principles to ensure the satisfactory installation of the boiler, although detail may need slight modification to suit particular local site conditions.

In all cases the installation must comply with current Building Regulations, Local Authority Byelaws and other specifications or regulations as they affect the installation of the boiler. If any guidance contained within this manual contradicts advice given in the main instruction manual then the most stringent advice must apply.

It should be noted that the Building Regulations requirements may be met by adopting the relevant recommendations given in British Standards BS 8303, BS EN 15287-1:2007 as an alternative means to achieve an equivalent level of performance to that obtained following the guidance given in Approved Document J.

Please note that it is a legal requirement under England and Wales Building Regulations that the installation of the boiler is either carried out under Local Authority Building Control approval or is installed by a Competent Person registered with a Government approved Competent Persons Scheme. HETAS Ltd operate such a Scheme and a listing of their Registered Competent Persons can be found on their website at [www.hetas.co.uk](http://www.hetas.co.uk).

#### **CO Alarms:-**

Building regulations require that whenever a new or replacement fixed solid fuel or wood/biomass appliance is installed in a dwelling a carbon monoxide alarm must be fitted in the same room as the appliance. Further guidance on the installation of the carbon monoxide alarm is available in BS EN 50292:2002 and from the alarm manufacturer's instructions. Provision of an alarm must not be considered a substitute for either installing the appliance correctly or ensuring regular servicing and maintenance of the appliance and chimney system.

### **HEALTH AND SAFETY PRECAUTIONS**

Special care must be taken when installing the boiler such that the requirements of the Health and Safety at Work Act are met.

#### **Handling**

Adequate facilities must be available for loading, unloading and site handling.

#### **Fire Cement**

Some types of fire cement are caustic and should not be allowed to come into contact with the skin. In case of contact wash immediately with plenty of water.

## **Asbestos**

This boiler contains no asbestos. If there is a possibility of disturbing any asbestos in the course of installation then please seek specialist guidance and use appropriate protective equipment.

## **Metal Parts**

When installing or servicing this boiler care should be taken to avoid the possibility of personal injury.

## **BOILER PERFORMANCE**

Refer to the main instruction manual for details of the boiler's performance.

## **PREPARATORY WORK AND SAFETY CHECKS**

### **IMPORTANT WARNING**

This boiler must not be installed into a chimney that serves any other heating appliance.

There must not be an extractor fan fitted in the same room as the boiler as this can cause the boiler to emit fumes into the room.

## **Chimney**

In order for the boiler to perform satisfactorily the chimney height must be sufficient to ensure an adequate draught of approximately 15 Pa so as to clear the products of combustion and prevent smoke problems into the room.

NOTE: A chimney height of not less than 4.5 metres measured vertically from the outlet of the boiler to the top of the chimney should be satisfactory. Alternatively the calculation procedure given in EN 13384-1 may be used as the basis for deciding whether a particular chimney design will provide sufficient draught.

The outlet from the chimney should be above the roof of the building in accordance with the provisions of Building Regulations Approved Document J.

Because the boiler runs at high efficiencies, the temperature of the flue gases is at times lower than conventional solid fuel appliances. Although it is not classed as a condensing appliance, the low flue gas temperature results in condensation occurring within the flue. Any chimney flue system must therefore be able to withstand the effects of condensate and operate under wet conditions (designation letter W). In addition it should be soot fire resistant and able to withstand the corrosive effects of flue products generated by solid fuels (designation G and 3 respectively). If installation is into an existing masonry chimney then it will require re-lining with a liner meeting the specification described above. Existing concrete or clay lined chimneys are not suitable for this boiler and must be lined as described above. All installations must be in accordance with Building Regulations Approved Document J.

Any existing chimney must be clear of obstruction and have been swept clean immediately before installation of the lining system. Where the chimney is believed to have previously served an open fire installation it is possible that the higher flue gas temperature from a closed appliance may loosen deposits that were previously firmly adhered, with the consequent risk of flue blockage. It is therefore recommended that the chimney be swept a second time within a month of regular use after installation.

If there is no existing chimney then any new system must be to the designation described above and in accordance with Building Regulations Approved Document J.

A single wall metal fluepipe is suitable for connecting the boiler to the chimney but is not suitable for use as the complete chimney. The chimney and connecting fluepipe must have a minimum diameter of 150 mm and its dimension should be not less than the size of the outlet socket of the boiler.

Any bend in the chimney or connecting fluepipe should not exceed 45°. 90° bends should not be used.

Combustible material should not be located where the heat dissipating through the walls of fireplaces or flues could ignite it. Therefore when installing the boiler in the presence of combustible materials due account must be taken of the guidance on the separation of combustible material given in Building Regulations Approved Document J and also in these boiler instructions.

If it is found that there is excessive draught in the chimney then a draught stabiliser should be fitted in the chimney above the chimney above the flue pipe connection. Fitting of a draught stabiliser will affect the requirement for the permanent air supply into the room in which the boiler is fitted in accordance with Approved Document J (see also combustion air supply).

Adequate provision e.g. easily accessible soot door or doors must be provided for sweeping the chimney and connecting fluepipe.

## Hearth

The hearth should be able to accommodate the weight of the boiler and its chimney if the chimney is not independently supported. The weight of the boiler is indicated in the brochure.

The boiler should preferably be installed on a non-combustible hearth of a size and construction that is in accordance with the provisions of the current Building Regulations Approved Document J.

The clearance distances to combustible material beneath, surrounding or upon the hearth and walls adjacent to the hearth should comply with the guidance on the separation of combustible material given in Building Regulations Approved Document J and also in these boiler instructions.

If the boiler is to be installed on a combustible floor surface, it must be covered with a non-combustible material at least 12mm thick, in accordance with Building Regulations Approved Document J, to a distance of 30 cm in front of the boiler and 15 cm to each side measuring from the door of the combustion chamber.

## Combustion air supply

In order for the boiler to perform efficiently and safely there must be an adequate air supply into the room in which the boiler is installed to provide combustion air. The provision of air supply to the boiler must be in accordance with current Building Regulations Approved Document J. An opening window is not appropriate for this purpose.

## Connection to chimney

All the boilers have a flue gas connector that allows connection to either a masonry chimney or a prefabricated factory made insulated metal chimney in accordance with the instructions. This connection should never be reduced in diameter to lower than that of the flue gas connector of the boiler. In some cases it may be necessary to fit an adapter in the connection pipe to increase the diameter to the required minimum diameter of 150 mm for burning wood fuel in accordance with UK regulations. Any connections should be made gas-tight and sealed with a suitable sealing agent such as fire cement.

## Connection to the central heating system

The boilers may be installed on either open vented or sealed fully pumped systems and a double-feed indirect cylinder to BS 1566 is necessary where there is a combined hot water and central heating system. Please ensure that a gravity heat-leak radiator/towel rail or equivalent is used to dissipate heat in the system when the pump is off if required.

The central heating system must be in accordance with BS EN 14336:2004: Heating Systems in Buildings. Installation and commissioning of water based heating systems. BS EN 12828: 2003; Heating Systems in Buildings. Design of water based heating systems. BS EN 12831: 2003; Heating Systems in Buildings.

Method for calculation of the design heat load and BS 6880:1988 Parts 1 to 3, Code of Practice for low temperature hot water heating systems of output greater than 45kW where appropriate.

## Electrical connections

The installation of any electrical services during the installation of this boiler and the associated heating system must be carried out by a registered competent electrician and in accordance with the requirements of the latest issue of BS 7671.

## Commissioning and handover

Ensure all parts are fitted in accordance with the instructions.

On completion of the installation allow a suitable period of time for any fire cement and mortar to dry out, before lighting the boiler. Once the boiler is under fire check all seals for soundness and that the boiler and water system are operating correctly. Ensure that the flue is functioning correctly and that all products of combustion are vented safely to atmosphere via the chimney terminal.

On completion of the installation and commissioning ensure that the operating instructions for the boiler are left with the customer. Ensure to advise the customer on the correct use of the appliance and warn them to use only the recommended fuel for the boiler.

Advise the user what to do should smoke or fumes be emitted from the boiler. The customer should be advised about restricting access to the boiler by children, aged and/or infirm people.

**Important Note:** In the event of the appliance failing to light after the initial ignition light-up process, please switch off the appliance immediately and contact the manufacturer for guidance. Please do not attempt to re-light the boiler until the issue has been resolved.

## Contact Details

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## The Clean Air Act 1993 and Smoke Control Areas

Under the Clean Air Act local authorities may declare the whole or part of the district of the authority to be a smoke control area. It is an offence to emit smoke from a chimney of a building, from a furnace or from any fixed boiler if located in a designated smoke control area. It is also an offence to acquire an „unauthorised fuel“ for use within a smoke control area unless it is used in an „exempt“ appliance („exempted“ from the controls which generally apply in the smoke control area).

The Secretary of State for Environment, Food and Rural Affairs has powers under the Act to authorise smokeless fuels or exempt appliances for use in smoke control areas in England. In Scotland and Wales this power rests with Ministers in the devolved administrations for those countries. Separate legislation, the Clean Air (Northern Ireland) Order 1981, applies in Northern Ireland. Therefore it is a requirement that fuels burnt or obtained for use in smoke control areas have been „authorised“ in Regulations and that appliances used to burn solid fuel in those areas (other than „authorised“ fuels) have been exempted by an Order made and signed by the Secretary of State or Minister in the devolved administrations.

Further information on the requirements of the Clean Air Act can be found here : <http://smokecontrol.defra.gov.uk/> Your local authority is responsible for implementing the Clean Air Act 1993 including designation and supervision of smoke control areas and you can contact them for details of Clean Air Act requirements.

The Windhager BioWIN 350, 450 and 600 pellet boilers have been recommended as suitable for use in smoke control areas when burning wood pellets.

## 1. Important initial information for the Technician

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# 1. Important initial information for the Technician

## 1.1 Safety precautions

The boiler and related accessories are state of the art and meet all applicable safety regulations. Your boiler and all accessories operate using 230 V AC electric current. Improper installation or repair can pose the danger of life-threatening electric shock. Installation may be performed only by appropriately qualified technicians.

### Caution symbols

Please take careful note of the following symbols in these Installation instructions.



#### Attention!

Ignoring the warnings identified can lead to **personal injury**.



#### Information!

Ignoring the warnings identified can lead to **malfunction of or damage to the boiler or heating system**.



#### Note!

The blocks of text highlighted provide **information and tips** for operation.

## 1.2 Flue

A properly dimensioned flue is required for optimum functioning of the combustion system. Calculation of the dimensions must follow EN 13384-1. See the technical data section for the values required for this calculation.

Please note that in the lower performance range, flue gases may be below 90 °C. Hearths should therefore be connected to thermally insulated flues meeting thermal transmittance coefficient Group I requirements according to DIN 18160 Part 1 or other appropriate, officially approved moisture-resistant exhaust systems.

The flue gas system must display at least the following classification:

Temperature class: T400 = nominal operating temperature 400 °C

Soot fire resistance class: G = flue gas system with soot fire resistance

Corrosion resistance class: 2 = suitable for unprocessed wood fuels

We would recommend fitting an energy-saving intake regulator for problem-free operation. This will largely prevent moisture in the flue, and losses resulting from down-time will be reduced (draught interruptions). If you have a feed pressure (flue draught) of more than 0.20 mbar, the energy-saving intake regulator must be fitted.

According to TRVB H118 a deflagration flap (combi energy-saving intake regulator with explosion flap EEX) must be fitted in the connecting piece (exhaust pipe) or in the flue inside the boiler room.

Our recommendation: Fit the exhaust pipe upward to the flue with U-bolts and provide an opening for cleaning. Insulate the exhaust pipe to avoid low flue intake temperatures.

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#### Information!



Frequently, overhauling existing systems involves over-sized flue cross-sections or flues not designed for low-temperature operation. We recommend an evaluation by the local building inspector before installing the boiler system. In this way appropriate modifications can be made to the flue before system installation (see technical data for flue calculation values).

## 1. Important initial information for the Technician

### 1.3 Boiler room



#### Attention!

The configuration of the entire system must comply with technical fire protection requirements in accordance with the applicable regulations, standards and guidelines.

- The minimum clearances for connections, cleaning and maintenance must be complied with – see section 2.2 Minimum clearances.
- Sufficient ventilation of the set-up area must be assured. See 2.5 Combustion air.



#### Information!

The boiler must only be installed in a dry, frost-free location.

### 1.4 Fuel storage

The pellets must be stored in a dry place in order to achieve trouble-free operation with optimum combustion and at maximum efficiency. The pellets can be stored in bulk in a storage room, sheet steel tank, fabric tank or a buried tank. The requirements for pellet storage are defined in ÖNORM M7137 for Austria or the Firing Ordinance (FeuV) for Germany.

See the separate planning documents for planning information about pellet storage.

#### Maximum transport length or height for a pellet feed system:

These max. values require a stable power supply (min. 220 V under load!). The suction turbine must be in the same room as the pellet boiler. The distance between the pellet boiler and the suction turbine must not exceed 3 m – Fig. 2.

Max. distance of 25 m between furthest away probe and pellet boiler with max. total height difference of 1.8 m  
Max. distance of 15 m between furthest away probe and pellet boiler with max. total height difference of 2.8 m  
Max. distance of 10 m between furthest away probe and pellet boiler with max. total height difference of 4.5 m

Total height difference: Sum of lengths of all rising pipes



#### Attention!

The pellets must be transported carefully into and out of the storage room so as to maintain good pellet quality.

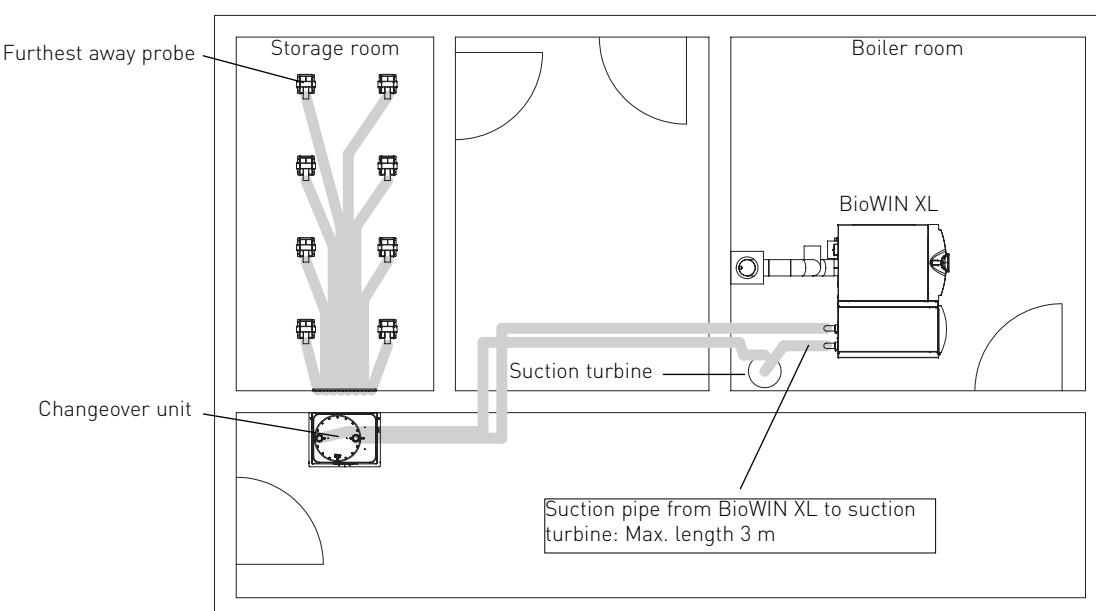


Fig. 2 Storage room, heating room – view from above

## 2. For the installer

### 2.1 Scope of delivery, packaging

#### 2.1.1 Boiler

The boiler is supplied on a wooden pallet covered with a plastic sack – Fig. 3. The cladding parts are in a separate cardboard box. Cleaning tools are packed in the combustion chamber and the ash chamber. In addition, the pellet feed unit is packed in several cardboard boxes.

#### 2.1.2 Optional accessories

##### Accessories for boiler

MES system control, motorised mixing valve, mixer groups, heating distributor, thermal discharge safeguard, stainless steel flue accessory, combi energy-saving intake regulator with explosion flap EEX (EZR for Germany)

##### Accessories for fully-automatic pellet feed

- Fully automated changeover unit with/without fire protection collars including 3x suction probes
- Fully automated changeover unit with/without fire protection unit including 8x suction probes and masonry feed-through
- Fastening clips for delivery hose (pack of 6)
- Delivery hose with flexible earth leads, DN 50/25 m (supply and return air hoses)
- Connecting piece for return air hose

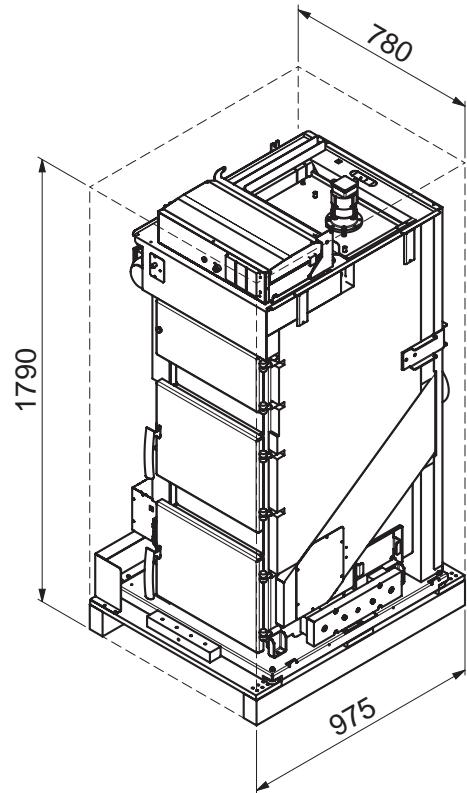


Fig. 3 Installation dimensions – BioWIN XL

##### Accessories for storage room

- Filling coupling set NW 100 mm (2 Storz A couplings with 0.5 m pipe, incl. fastening material) – with blockable blind covers
- Z-brackets (2x 2 m) incl. bolts and dowels for storage room door
- Plastic baffle plate (1500 x 1500 x 2 mm) incl. fastening material for storage room
- Fire protection collars (2x) incl. masonry attachment
- Pipe clamp for earthing the filling and return air lines Ø 100 mm and attaching them to the wall
- Pipes and bends (natural aluminium) for extending the filling and return air pipes Ø 100 mm.

##### Pellet storage rooms

- Sheet steel tank with volume of 2.3 to 9.6
- Fabric tank with volume of 2,1 to 6,1 t

## 2.2 Minimum clearances



### Attention!

Follow the installation guidelines for boiler rooms!

All dimensions in mm:

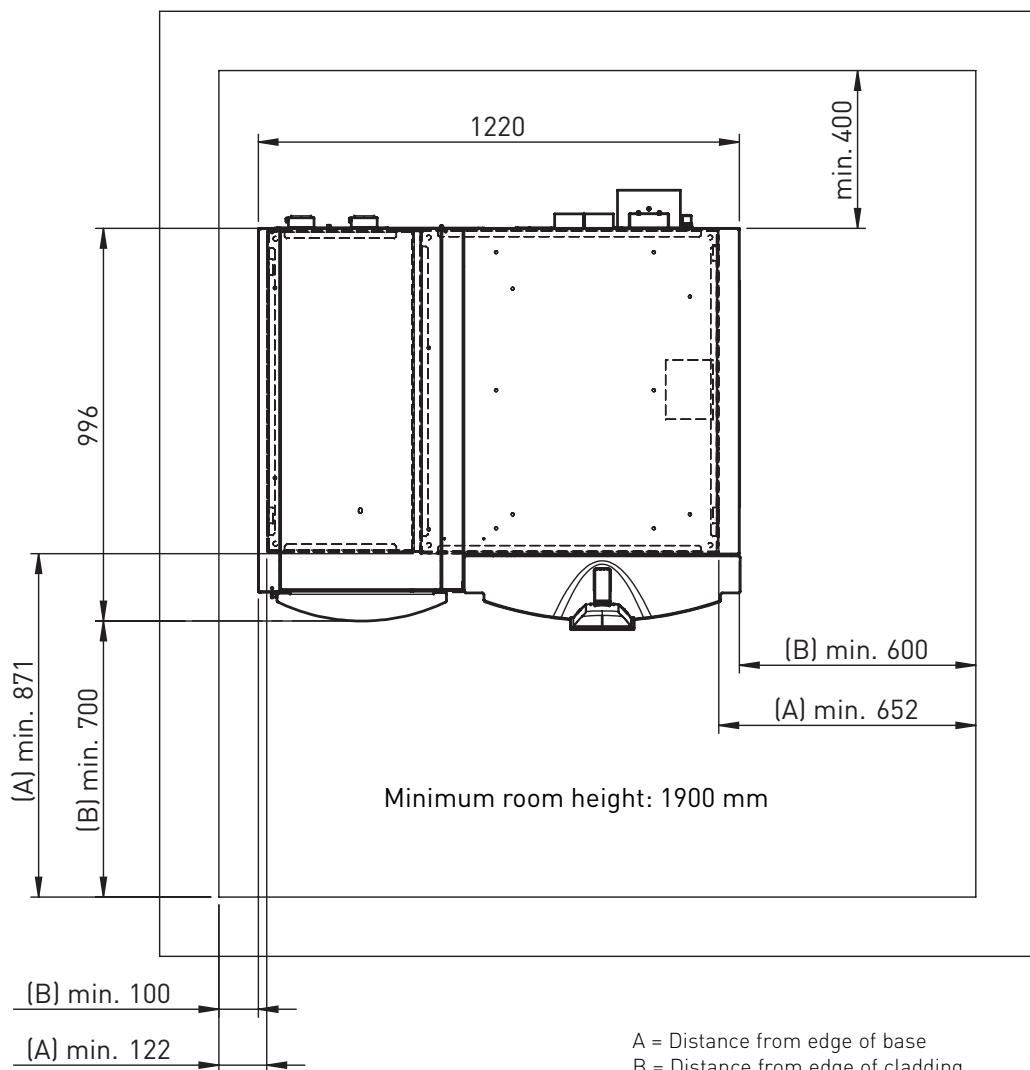


Fig. 4 BioWIN XL – view from above

## 2.3 Dimensional sketches

Front view

All dimensions in mm:

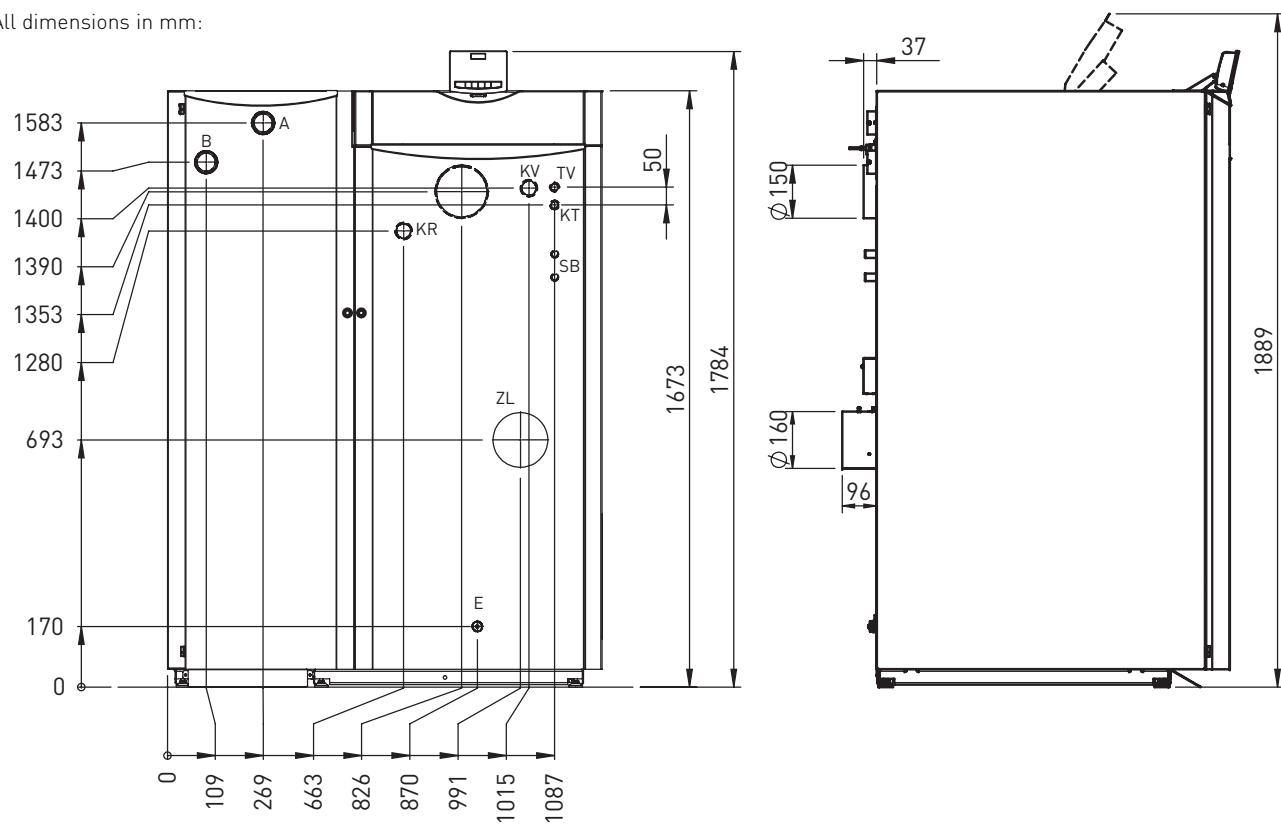


Fig. 5 BioWIN XL pellet boiler

KV ..... Boiler feed [5/4" pipe]  
 KR ..... Boiler return [5/4" pipe]  
 TV ..... Thermal valve sensor [1/2" sleeve]  
 SB ..... Safety device [1/2" pipe]  
 E ..... Discharge

A ..... Pellet feed (50 mm Ø pipe)  
 B ..... Reverse air flow (50 mm Ø pipe)  
 KT ..... Boiler temperature sensor  
 ZL ..... Supply air for operation independent of room air

## 2.4 System

The boilers are designed and approved as heat generators for hot water heating systems with permissible flow temperatures of up to 90 °C. The maximum flow temperature is factory-set at 75 °C. They may be installed **only in sealed systems**.

### 2.4.1 Standards

The following standards should be followed:

According to EN 12828 specifications, the following must be installed:

- A closed expansion tank.
- A reliably functioning safety valve installed at the highest point of the boiler or at a non-closable line.
- A manometer.
- A low-water cut-off: A low-water cut-off is not required for systems providing up to 300 kW nominal thermal output, if it can be ensured that a lack of water in the system will not result in excess heating. The boilers are equipped with an electronic temperature regulator and a type-tested safety temperature limiter. If the boiler is above the radiators, then a low-water cut-off must be installed.

## 2. For the installer

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- e) An automatic device for dissipating heat which will prevent the maximum permitted operating temperature from being exceeded. The built-in thermal safety device should always be used with the thermal discharge safeguard (ÖNORM B 8131).

### 2.4.2 Heating circuits

A motorised mixing valve is always required for the BioWIN XL in order to protect the boiler and one must be fitted in each heating circuit. A feed contact thermostat (FK-001) must be installed for underfloor circuits.

### 2.4.3 Circulation pump

Since 2013, in Europe new circulation pumps are required to fulfil minimum energy efficiency requirements. Please refer to the Energy Efficiency Index (EEI).

### 2.4.4 Return temperature

The return flow temperature increase installed as standard means that BioWIN XL can be operated with a return temperature down to min. 20 °C. No external return flow temperature increase is required.

**Exception:** Systems with a buffer in which the buffer is loaded directly from BioWIN XL with a return hold-up group.

### 2.4.5 Operation with external control, with buffer only

The following requirements must be satisfied for this interface:

- Minimum boiler temperature and start-up relief:  
The consumer pumps (heating circuit and domestic water pumps) may only be switched on at a boiler temperature of more than 50 °C if the burner is on and must be switched off at a boiler temperature of less than 45 °C.
- Pump lag time:  
A lag time of at least 10 min. must be observed for all consumer pumps and a minimum heat consumption must be ensured during the burnout phase.
- **Die anlagenspezifischen Einstellungen sind so zu wählen, das die Laufzeit des Kessel im Durchschnitt min. 1,5 Stunden beträgt (kürzere Laufzeiten führen zu stärkerer Verschmutzung des Kessels und größerem Verschleiß).**
- a) Heating requirement (setpoint specification) with 2-point controller  
The 2-point controller switches the burner ON/OFF with a potential-free contact via the „external heating requirement“ interface of the BioWIN XL.
- b) Heating requirement (setpoint specification) with analogue interface  
The controller passes the external boiler temperature setpoint via the analogue 0–10 V interface.

### 2.4.6 Buffer

In principle a pellet boiler system does not need a buffer. A guaranteed minimum heat consumption is required, e.g. fit a consumer circuit that cannot be blocked off or do not fit thermostat valves on all radiators.

**Exceptions:** If the total heating requirements of the building according to the ÖNORM M 7500 or EN 12831 calculation are less than 50 % of the boiler's nominal output, we would recommend integrating a buffer in the system. This means that the BioWIN XL loads the buffer with a return hold-up group.

## 2. For the installer

### 2.4.7 Heating water



#### Attention!

The chemical composition of the heating water must conform with local legislation and meet the directives, guidelines and standards, e.g. ÖNORM H 5195, VDI 2035, SWKI BT 102-01.

#### Applicable for Austria (excerpt from ÖNORM H 5195):

- a) According to ÖNORM M 5195 (2010 edition), the condition of the heating water must be checked every 2 years by a heating technician in order to avoid corrosion and sediment accumulation in the heating system.
- b) The pipe lines and heating appliances should be thoroughly rinsed before the boiler is connected.
- c) To protect the boiler from contamination from the heating system, **installation of a dirt trap** is required in old or existing systems with maintenance cocks installed in the return line.
- d) If oxygen diffusion or sludge build-up cannot be prevented, the system must be segregated by means of a heat exchanger.
- e) If antifreeze is used, a **minimum volume of 25 % antifreeze** is required, otherwise corrosion prevention is not guaranteed.

### 2.4.8 Water-side resistance (pressure loss)

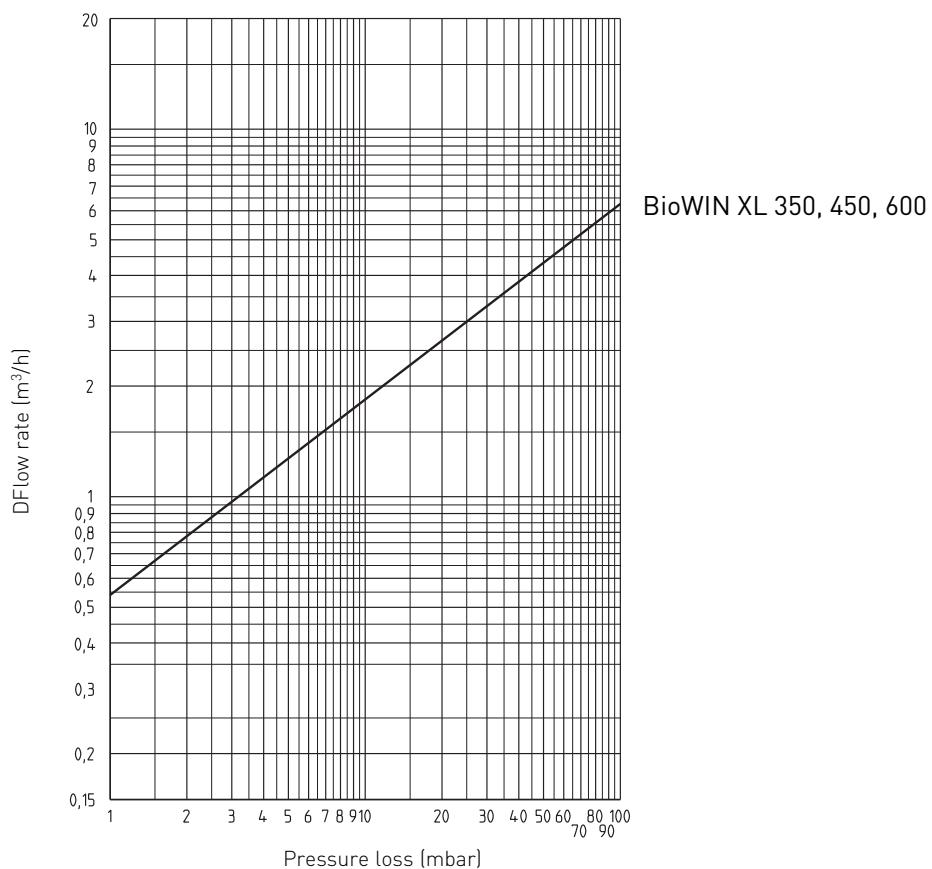


Diagram 1

## 2.5 Combustion air

An adequate supply of combustion air is absolutely essential. The combustion air must be free from pollutants (gases, vapours and dusts), otherwise malfunctions and increased wear (e.g. corrosion) may occur.



#### Information!

Malfunctions or complaints occasioned by inadequate combustion air will not be covered by the guarantee!

## 2. For the installer

### 2.5.1 Operating with room air

#### Combustion air supply directly from the installation room

The combustion air is drawn directly by the device from the installation room, therefore the installation room has to be adequately ventilated. The combustion air should be fed to near the boiler.



#### Attention!

The configuration of the entire system must comply with the requirements of regional legislation, applicable regulations, standards and guidelines.

#### Applicable for Austria (excerpt from ÖNORM H 5170):

The area of the free minimum cross-section must be  $2.5 \text{ cm}^2$  per kW of the boiler's nominal total output<sup>1</sup>.

The opening to the outdoors for combustion air should be designed as follows:

- the flow of air must not be restricted in any way by the weather (e.g. snow, leaves),
- the free cross-section area remains the same when taking the cover grille, discs etc. into consideration.

#### Applicable for Germany (excerpt from the Firing Ordinance, September 2007):

For hearths with a nominal output of not more than 35 kW in total that are dependent on surrounding air, supply of combustion air will be sufficient providing that every installation rooms has an opening that vents to the atmosphere with an unobstructed cross-section of at least  $150 \text{ cm}^2$  or two openings of  $75 \text{ cm}^2$  each, or pipes leading outside with a technically equivalent cross-section.

### 2.5.2 Operating independently of the room air

#### Combustion air supplied from ventilation draught in the flue

The combustion air is drawn in through an unobstructed ventilation draught in the chimney – Fig. 6. The openings for the intake air and the flue gas are only allowed to be located with a square with a 500 mm side length. This ensures that the same air pressure always prevails in the openings (even in very windy conditions).

Only flue gas systems that have been tested and approved for solid fuel applications may be used.

In the BioWIN XL 350 – 600, the air intake pipe can be connected directly (without accessories).

#### The lengths stated are only a guideline and should not take the place of an actual flue calculation.

Pellet boiler	BioWIN XL 350 – 600
Max. induction length (Air intake)	15 m, each 90° bend reduces induction length by 1 m
Querschnitt Zuluft	Min. diameter 150 mm (or technically equivalent cross-section)
Combustion air line (Air intake)	DN 160 Seal integrity: min. $0.1 \text{ m}^3/\text{h}$ at 0.1 mbar; temperature resistance: $95^\circ\text{C}$ (commercially available plastic drain pipes with correctly inserted seal)
Connecting piece (Flue gases)	Max. length 3 m, only pipes with minimum classification acc. to EN 1851-1: <b>T200 H1 D V2 L{xxxx} G{xx}</b> are to be used.
Shaft head	Tested wind protection fixture or design in accordance with DIN V 18160-1 – Fig. 6.
Air/flue gas system (sketch Fig. 5)	Configuration as equal-pressure system (induction opening for air intake and opening for flue gas discharge are within a square with a max. edge length of 0.5 m) Required accreditations: for solid fuels; moisture-resistant
Swinging draught flap, explosion flap	Energy-saving intake regulators or explosion flaps are not allowed to be installed in the living area. Comply with the statutory regulations and directives.

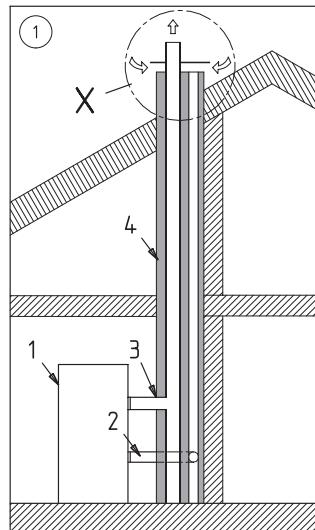
<sup>1</sup> The boiler's nominal total output is the sum of the nominal outputs of all heat generators installed in the same boiler / installation room.

## 2. For the installer

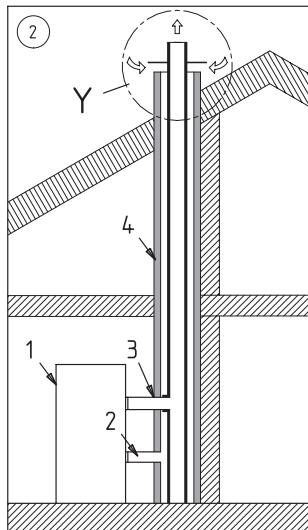
### Hearth with flue gas blower to DIN 18897-1 (type FX42X) for connection to a pressure-equal air/flue gas system

#### Examples of models:

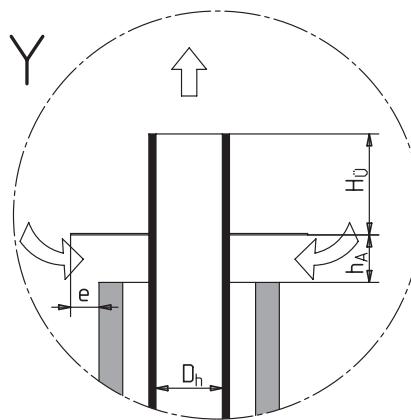
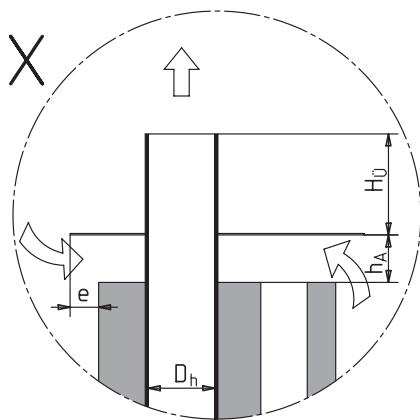
Air/flue system with parallel supply air/flue layout



Air/flue system with concentric supply air/flue layout

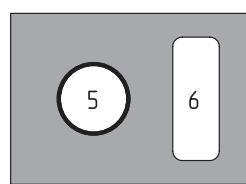


- 1.....Pellet boiler
- 2.....Combustion air line (intake air)
- 3.....Connecting piece (flue gas)
- 4.....Air/flue gas system



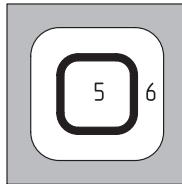
Detail X, Y  
Opening (shaft head in accordance with DIN V 18160-1)

- Dh.....flue gas diameter
- HÜ .....spacing of opening
- hA.....spacing of dispersion plate
- e.....protrusion of dispersion plate



#### Requirements:

- HÜ > 2 x Dh
- hA = min. 10 cm
- e = 0 cm to 8 cm



#### Requirements:

- HÜ > Dh
- hA = min. 10 cm
- e = 0 cm to 8 cm

- 5.....Flue gases
- 6.....Combustion air (intake air)

Fig. 6 Sketch of ventilation draught in flue

The connection for the connecting piece on the chimney should be designed such that the condensate is prevented from flowing from the chimney back into the connecting piece.

**Please note for Germany:** Only chimneys with general technical approval, classified as **W3G** according to DIN V 18160 Part 1 may be used.

## 2. For the installer

### 2.6 Installation sequence

- a) Transport boiler to installation site and remove transport protection – see section 2.7.
- b) Fit side integral fuel hopper and cladding – see section 2.8.
- c) Fit exhaust pipe – see section 2.9.

### 2.7 Setting up, preparing for installation

- Transport boiler to installation site on wooden pallet.



#### Tip!

The rear transport bracket is intended for clamping to a barrow – Fig. 9.

- The boiler can be installed directly on a non-flammable surface and does not require special foundations. If foundations have been provided, we recommend that they should be made according to the boiler dimensions to ensure that the four set screws make contact properly.
- Remove 2 x transport screws at front and back – Fig. 7.
- Remove transport protection and transport bracket - Fig. 8 and 9.
- Remove crate and unscrew floor plate of integral fuel hopper – Fig. 10.

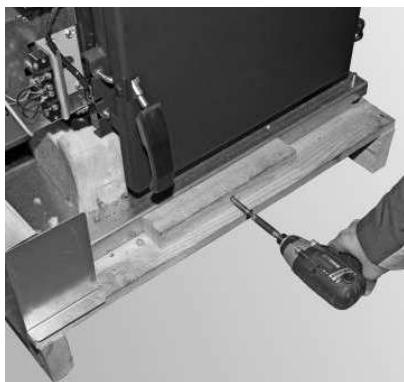


Fig. 7 Removing transport screws

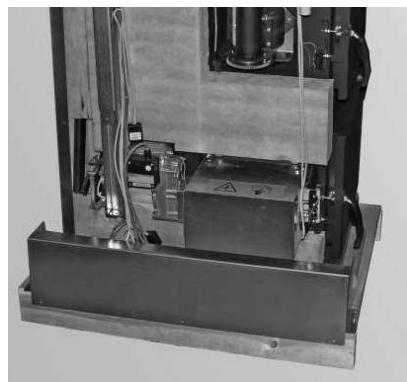


Fig. 8 Removing transport protection



Fig. 9 Removing transport bracket



Fig. 10 Remove crate and unscrewing floor plate of integral fuel hopper

## 2.8 Installation

The cladding of the BioWIN XL comprises the following parts:

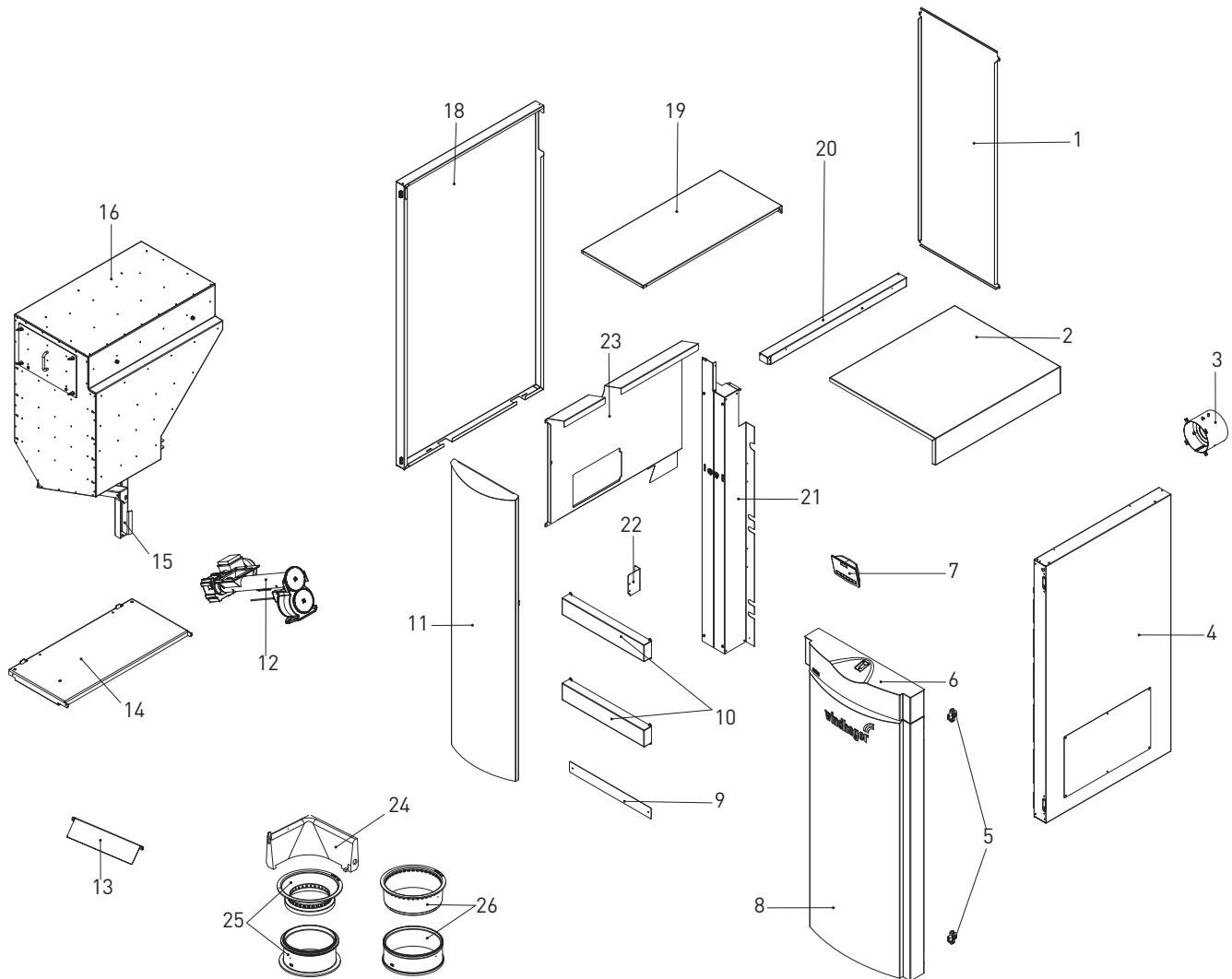


Fig. 11 Parts of BioWIN XL 350/450/600

1.....Rear wall	14.....Floor plate
2.....Cladding cover	15.....Integral fuel hopper support
3.....Intake fitting	16.....Integral fuel hopper
4.....Right side panel	18.....Left side panel
5.....Hinges	19.....Integral fuel hopper cladding cover
6.....Cladding door cover	20.....Top right fuel hopper cladding
7.....InfoWINplus	21.....Centre panel, vertical
8.....Cladding door, right	22.....Hand guard bracket
9.....Base panel	23.....Side anti-contact protection
10.....Centre panel, horizontal	24.....Ash wedge (BioWIN XL 350 only)
11.....Cladding door, left	25.....Top and bottom cone parts (BioWIN XL 350)
12.....Auger tube rotary feeder unit	26.....Top and bottom cone parts (BioWIN XL 450/600)
13.....Access ramp	

## 2. For the installer

- Fit floor plate (part 14, attached to integral fuel hopper for transport, see Fig. 10) on left side – Fig. 12, 13.

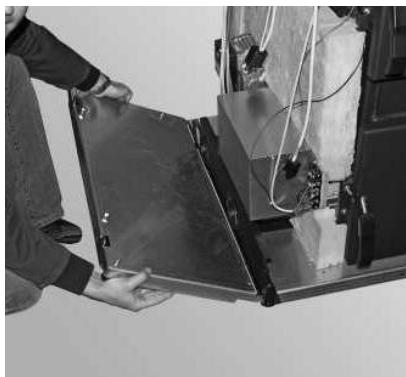


Fig. 12 Attaching the floor plate



Fig. 13 Attaching the floor plate

- Align the boiler and floor plate with the set screws horizontally or slightly inclined toward the rear – Fig. 14.
- Remove support for integral fuel hopper (part 15) from boiler by removing transport attachments (cable ties) – Fig. 15.

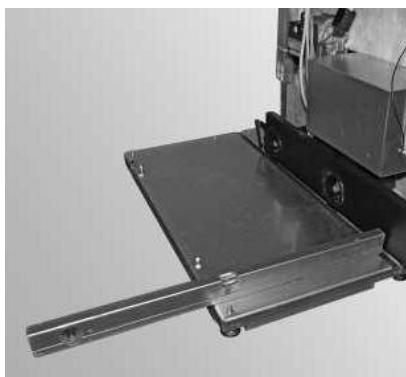


Fig. 14 Aligning boiler

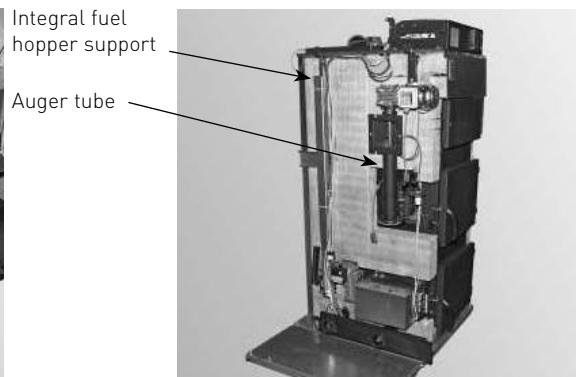


Fig. 15 Boiler aligned with floor plate

- Unscrew auger tube rotary feeder (part 12) with transport attachments (sheet metal brackets) from boiler (Fig. 16) and remove transport attachments – Fig. 17.



Fig. 16 Unscrewing transport attachments from boiler

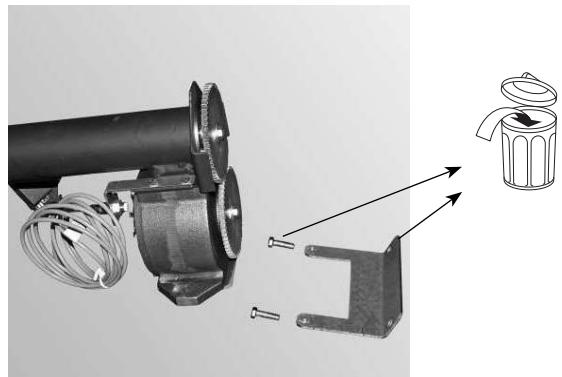


Fig. 17 Unscrewing transport attachments from rotary feeder

## 2. For the installer

- Screw auger tube rotary feeder to boiler with 2 hexagon screws (M10 x 20) – Fig. 18, 19.



### Attention!

Ensure well-fitting seal between rotary feeder and boiler.

2x  
M10 x 20



Fig. 18 Mounting auger tube rotary feeder unit

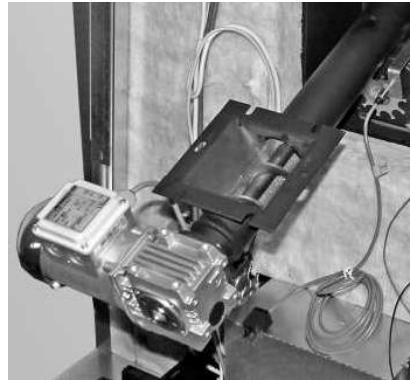


Fig. 19 Auger tube rotary feeder unit mounted

- Slide sensor for auger tube safety thermostat together with sensor guard (Fig. 20) into sensor holder as far as it will go – Fig. 21.



Fig. 20 Sensor and sensor guard



Fig. 21 Inserting sensor and sensor guard into holder on auger tube

- Connect 3-pin plug for rotary feeder proximity switch – Fig. 22.

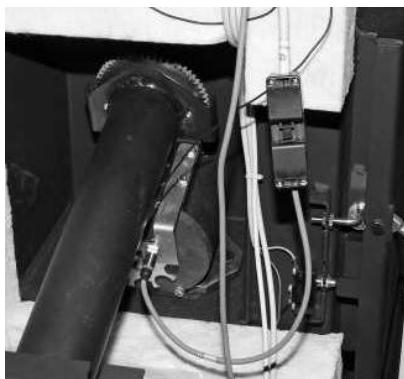


Fig. 22 Connecting 3-pin plug for proximity switch

## 2. For the installer

- Fit 2 TT screws (M8 x 16) about 1/3 of the way into the side of the integral fuel hopper – Fig. 23.
- Fit integral fuel hopper (part 16) with inserted screws into the 2 lugs at the top and tighten screws – Fig. 24, 25.
- Secure integral fuel hopper below at front with 1 x M10 nut – Fig. 26.

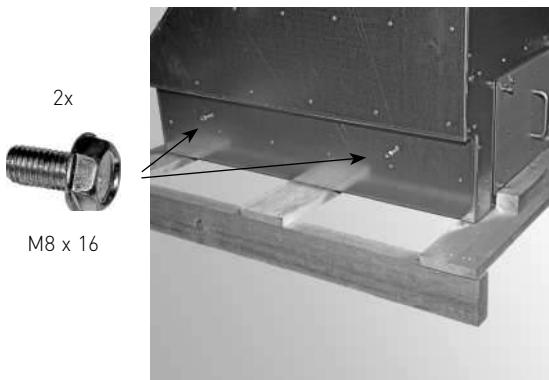


Fig. 23 Inserting screws by approx. 1/3



Fig. 24 Fitting the integral fuel hopper



Fig. 25 Tightening 2 TT screws at top

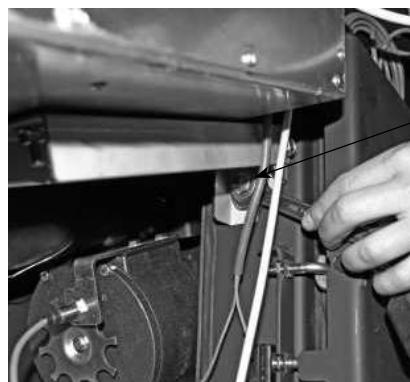


Fig. 26 1 nut at bottom of integral fuel hopper

- Remove 1 TT screw (M8 x 16) from the floor plate (Fig. 27) and use them to mount the one support (attached to the side of boiler) on the floor plate.



### Note!

First secure the one support to the fuel hopper at the top with 1 TT screw (M8 x 16) and then attach to the floor plate with 1 TT screw (M8 x 16) – Fig. 28.



Fig. 27 Removing 1 TT screw

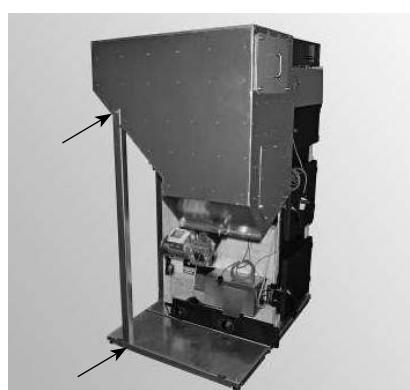


Fig. 28 Attach support first to hopper and then to floor plate

## 2. For the installer

- Screw hopper to auger tube flange plate with 6 x M8 U-washers and 6 hexagon screws (M8 x 25) – Fig. 29.



### Attention!

Ensure well-fitting seal.

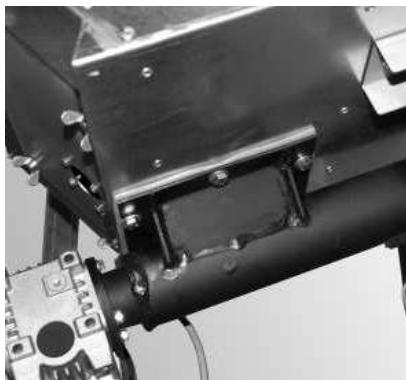


Fig. 29 Fitting auger with 6 U-washers and 6 hexagon screws

- Connect auger motor plug (Fig. 30, 31)

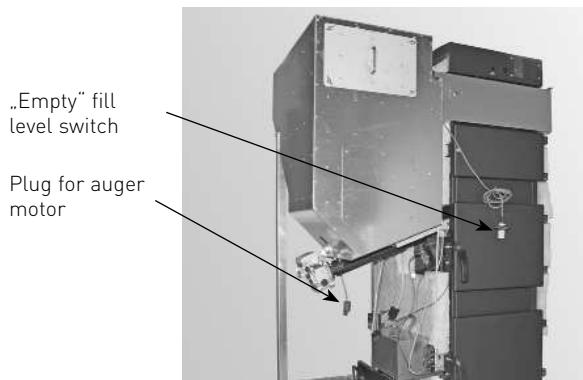


Fig. 30 Plugs for auger motor and fill level switch



Fig. 31 Connecting plug for auger motor

- Mount „empty“ fill level switch on bottom left of hopper with 4 TT screws (M5 x 12) (Fig. 32) and „full“ fill level switch at top rear of hopper with 4 TT screws (M5 x 12) – Fig. 33.



Fig. 32 Mounting „empty“ fill level switch on bottom left of hopper with 4 TT screws



Fig. 33 Mounting „full“ fill level switch to top rear of hopper with 4 TT screws

## 2. For the installer

- Fit right side panel (part 4); at bottom, position in cut-out in base – Fig. 34.
- Thread InfoWINplus cable into side panel as shown in Fig. 35 and press in strain relief.



Fig. 34 Fitting right side panel

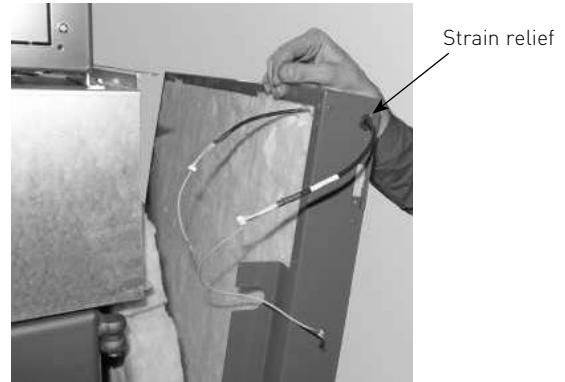


Fig. 35 Threading InfoWINplus cable into side panel

- Thread InfoWINplus cable through opening beside control panel – Fig. 36. For connection in control panel, see section 3.1.3.
- Secure side panel at top with 3 self-tapping screws – Fig. 37.

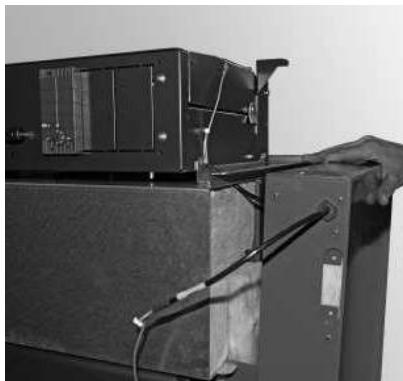


Fig. 36 Fitting right side panel – view from below

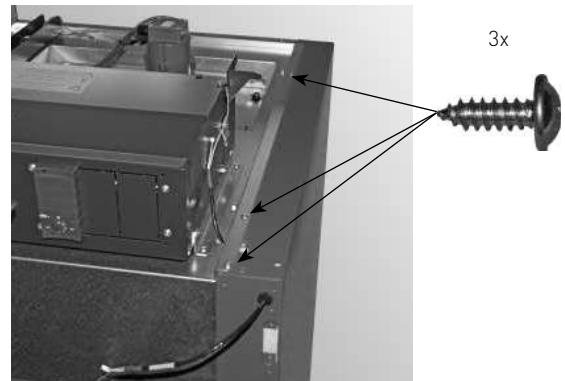


Fig. 37 Threading InfoWINplus cable into side panel

- Fit vertical centre panel (part 21) (Fig. 38), remove 2 x prefitted TT screws at bottom – Fig. 39.

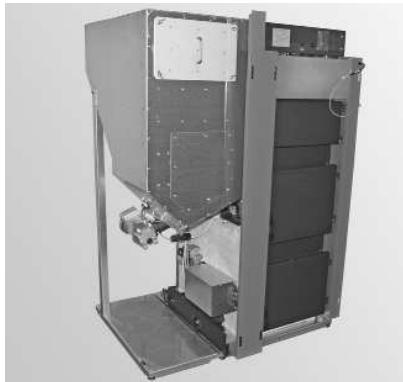


Fig. 38 Fitting vertical centre panel

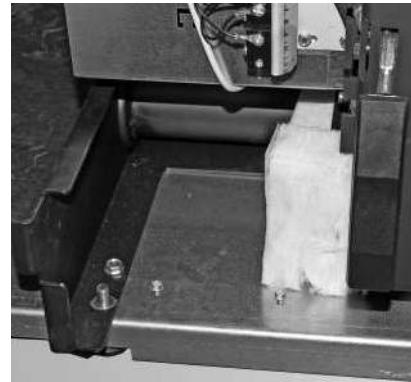


Fig. 39 Removing prefitted TT screw

## 2. For the installer

- Secure vertical centre panel at top with 2 self-tapping screws (Fig. 40) and at bottom with previously removed 2 TT screws (M5 x 12) – Fig. 41.

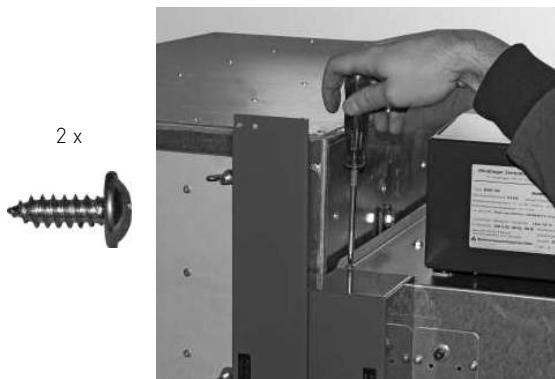


Fig. 40 Securing centre panel at top with 2 self-tapping screws

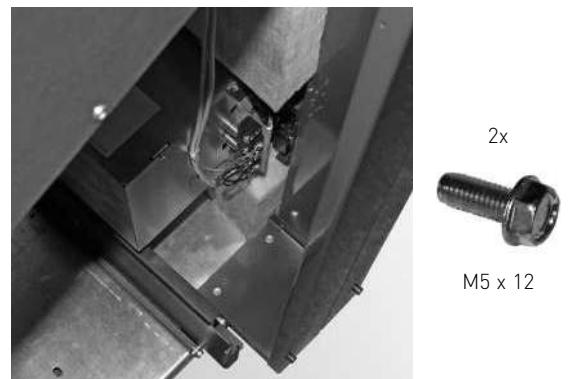


Fig. 41 Securing centre panel at bottom with 2 TT screws

- Fit hand guard bracket (part 22); fasten to vertical centre panel with 2 self-tapping screws – Fig. 42.

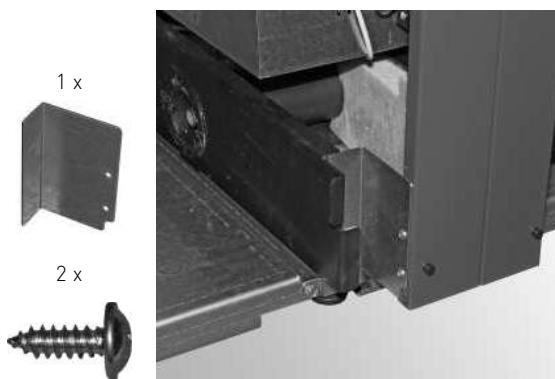


Fig. 42 Fit hand guard bracket with 2 self-tapping screws

- Fit horizontal centre panels (part 10); secure each panel with 4 self-tapping screws – Fig. 43.
- Mount base panel (part 9) with 2 self-tapping screws – Fig. 44.



Fig. 43 Securing both centre panels with 4 self-tapping screws each



Fig. 44 Securing base panel with 2 self-tapping screws

## 2. For the installer

- Remove prefitted TT screw at rear – Fig. 45. Slide side anti-contact protection plate (part 23) into guide slot from the back (Fig. 46) and secure with the previously removed TT screw (M5 x 12) (Fig. 47) and 2 self-tapping screws at the front – Fig. 48.



Fig. 45 Removing prefitted TT screw



Fig. 46 Sliding anti-contact protection plate into guide slot



Fig. 47 Securing anti-contact protection plate with TT screw



Fig. 48 Attaching anti-contact protection plate at front with 2 self-tapping screws

- Fit left side panel (part 18); at bottom, position in cut-out in base – Fig. 49.
- Secure the side panel to the hopper at the top rear using 1 prefitted TT screw (M5 x 12) – Fig. 50.



Fig. 49 Fitting left side panel



Fig. 50 Securing left side panel to hopper at top rear with 1 TT screw

## 2. For the installer

- Fit rear wall (part 1); secure with 4 self-tapping screws – Fig. 51.
- Fit hopper cladding at top right (part 21) (Fig. 52); secure at front and side with 1 self-tapping screw in each case (Fig. 53) and Secure at the rear with 2 prefitted TT screws (M5 x 12) – Fig. 54.

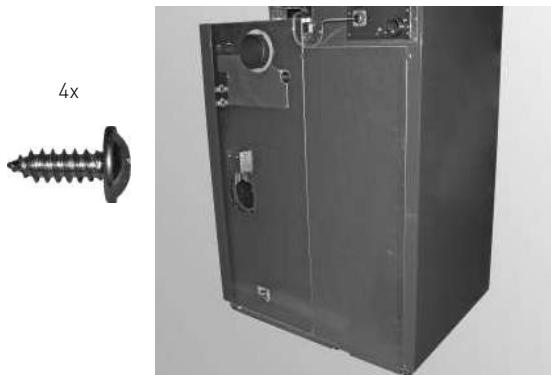


Fig. 51 Securing rear wall with 4 self-tapping screws



Fig. 52 Mounting hopper cladding at top right

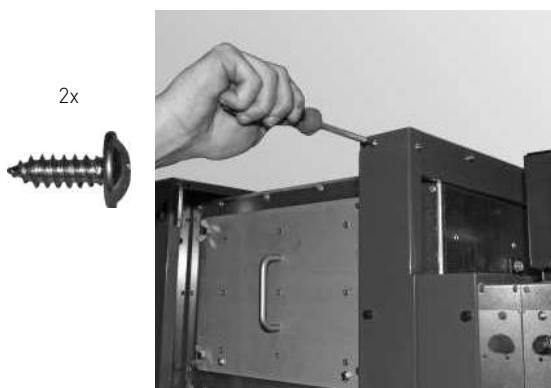


Fig. 53 Securing hopper cladding at front and side with self-tapping screws

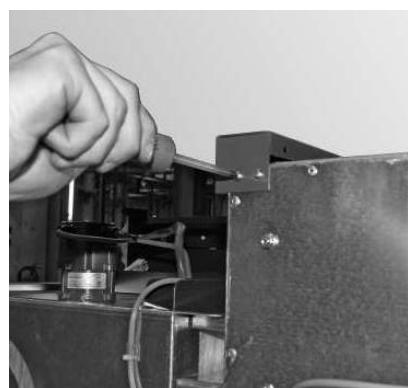


Fig. 54 Securing rear hopper cladding with 2 TT screws

- Fit cover of integral fuel hopper (part 20); secure with 2 self-tapping screws at front (Fig. 55) and Secure at the rear with 2 prefitted TT screws (M5 x 12) – Fig. 56.

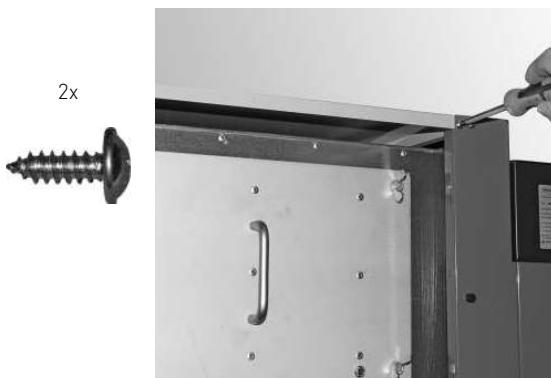


Fig. 55 Securing cover of integral fuel hopper at front with 2 self-tapping screws

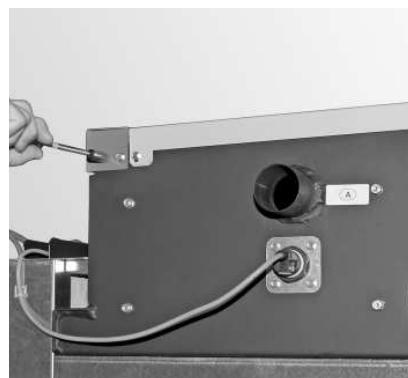


Fig. 56 Securing reserve supply container cover at rear with 2 TT screws

## 2. For the installer

- Remove cladding door cover (part 6) from cladding door; remove 4 self-tapping screws (Fig. 57), push cover back and lift off – Fig. 58.

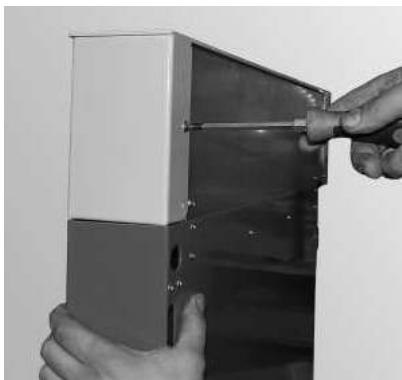


Fig. 57 Demounting cladding door cover – removing screws



Fig. 58 Pressing back and lifting off cladding door cover

- Fit both door hinges (part 5) top and bottom in cladding door (part 9) with 2 countersunk screws each – Fig. 59.
- Mount cladding door (part 9) with hinges on right side panel (part 4) using 2 countersunk screws and insert InfoWINplus cable through opening – Fig. 60.



Fig. 59 Fitting both hinges on cladding door

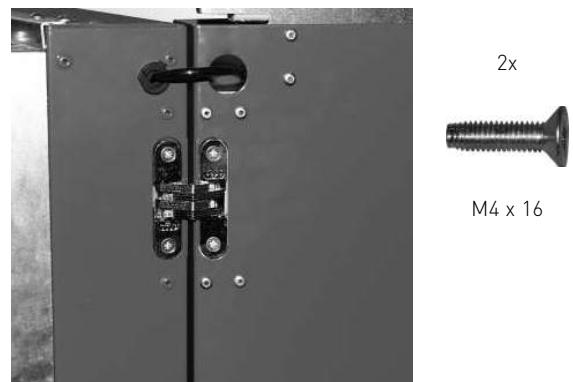


Fig. 60 Mounting cladding door with hinges on right side panel

- Thread InfoWINplus cable into door – Fig. 61.
- Mount InfoWINplus (part 8) on cladding door cover (part 6) with a saw tooth ring for earthing (Fig. 62) and 3 nuts – Fig. 63.



Fig. 61 Threading in InfoWINplus cable



Fig. 62 Fit saw tooth ring under one nut – earthing

## 2. For the installer

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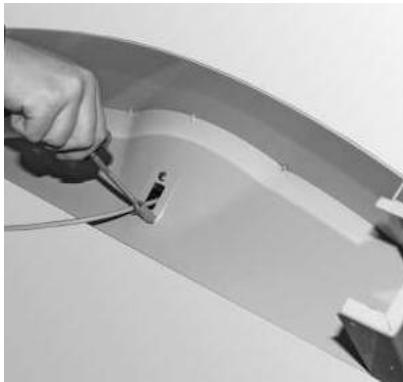


Fig. 63 Mounting InfoWINplus on cladding door cover

- Screw earth cables to cover (with saw tooth ring between cover and earth) (Fig. 64) and connect 4-pin plug for InfoWINplus cable (5-pin plug remains unconnected)– Fig. 65.



Fig. 64 Attaching earthing cables and saw tooth ring to cover

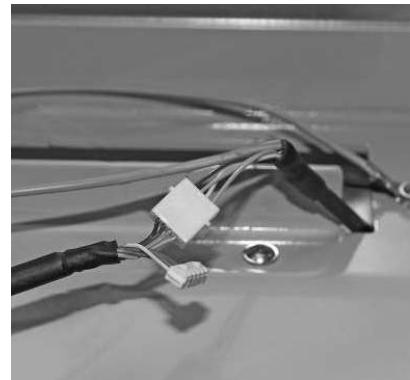


Fig. 65 Connecting InfoWINplus plug and attaching earthing cables

- Mount cladding door cover on door again with 4 self-tapping screws – Fig. 66.

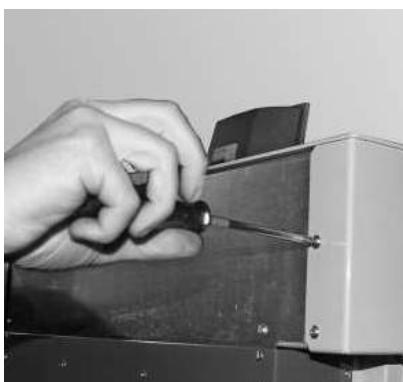


Fig. 66 Reattaching the cladding door cover

## 2. For the installer

- Place the cone in the burner pot – Fig. 67.
- Fit the ash wedge (BioWIN XL 350 only) on the burner pot in the right-hand corner, making sure the limit stop is behind the screw head – Fig. 68.

**BioWIN XL 350      BioWIN XL 450/600**

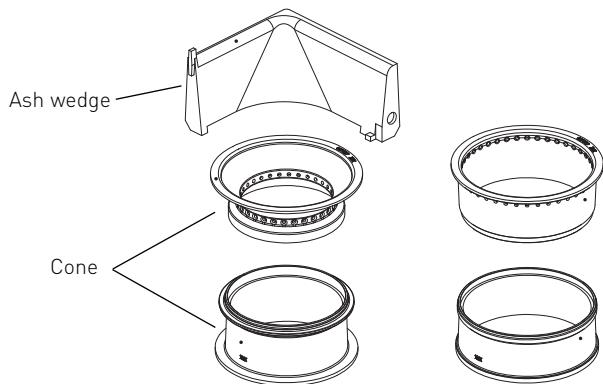


Fig. 67 Fit cone and ash wedge (with BioWIN XL 350 only) in / on burner pot.

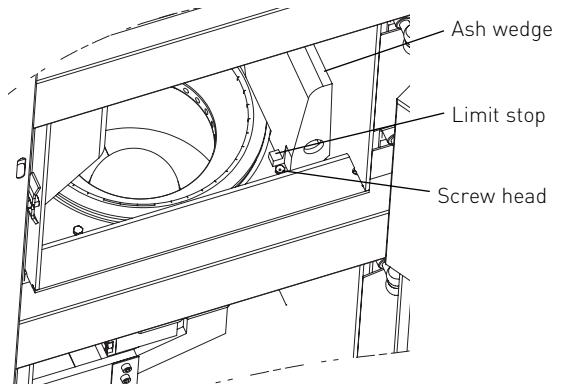


Fig. 68 Fit cone and ash wedge (with BioWIN XL 350 only) in / on burner pot.

- Close cladding door and turn key a quarter turn to the right to lock – Fig. 69.



Fig. 69 Closing the cladding door and locking with the key

- Mount left cladding door (part 12) on integral fuel hopper – Fig. 70
- Attach access ramp (part 14) for ash container with 2 prefitted TT screws (M5 x 12) – Fig. 71.



Fig. 70 Fitting left cladding door



Fig. 71 Attaching access ramp with 2 screws (M5 x 12)

## 2. For the installer

- Slide in the ash container – Fig. 72.
- Push the ash container slightly to the right and slide the handle all the way in – Fig. 73.



Fig. 72 Sliding in the ash container



Fig. 73 Pressing the container slightly to the right and sliding the handle all the way in

- Closing the bracket fastener – Fig. 74.
- Close left cladding door and turn key a quarter turn to the left to lock – Fig. 75.



Fig. 74 Closing the bracket fastener



Fig. 75 Closing the cladding door with the key

- Install the hanger with the instructions folder and cleaning and operating implements on a wall in the boiler room – Fig. 76.

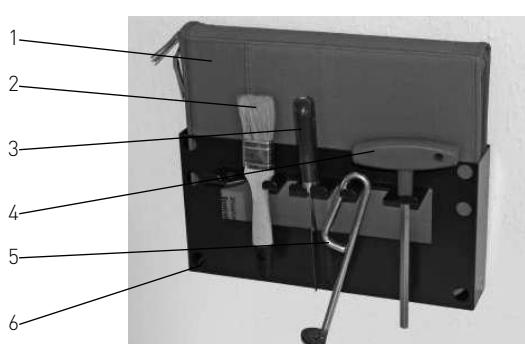
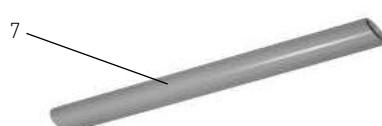


Fig. 76 Mounting hanger with instructions folder, cleaning and operating implements

### Supplied as standard:

- 1.....Folder containing instructions
- 2.....Cleaning brush
- 3.....Spatula
- 4.....Key
- 5.....Down chute cleaning tool
- 6.....Hanger (for installation on the wall)
- 7.....Suction tube for cleaning the primary air tube in the burner pot



## 2. For the installer

- Mount intake fitting (part 3) on rear of boiler with 4 self-tapping screws and connect both pressure hoses – Fig. 77. Set the orifice in the intake fitting to the value set on the sticker (0-7). To do this, unfasten 2 screws, turn the orifice (orifice fully open = 0) and retighten the screws

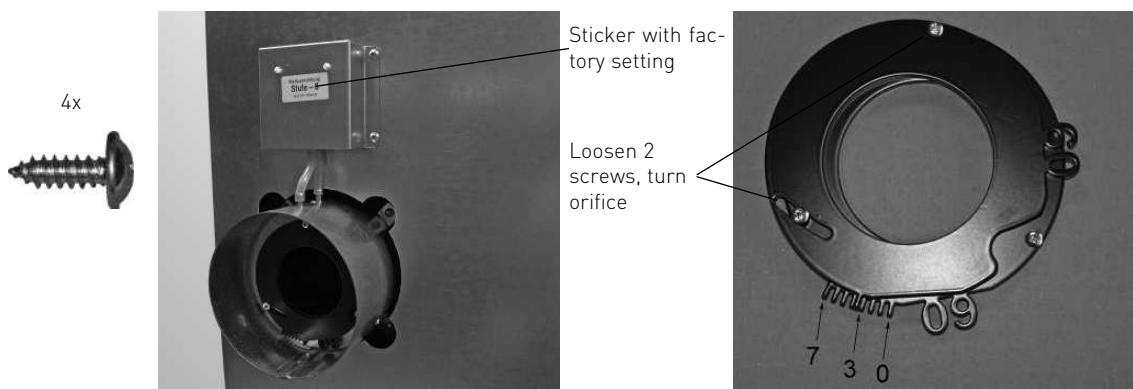


Fig. 77 Mounting the intake fitting

Fig. 78 Setting the orifice in the intake fitting to the value on the sticker

- Fit cladding cover (part 2) – Fig. 79.

For installation of the hoses and installation notes, see installation instructions for suction turbine and changeover unit.



Fig. 79 Fitting the cladding cover

## 2.9 Installing the exhaust pipe

- Install the exhaust pipe upward to the flue (45° is the ideal angle). Maximum exhaust pipe length 3 m.



### Information!

Any section of this exhaust line that only rises slightly (up to 30°) or is horizontal is not allowed to be more than 1 m in length.

- Avoid 90° bends, 45° bends are better
- Make the flue connection at 45° if possible.
- Do not push the exhaust pipe too far into the flue.
- Do not seal the exhaust pipe completely into the flue. Connection with flexible exhaust pipe inlet into the flue. The Induced draught fan can cause sound transmissions that create noise pollution.
- The BioWIN XL is a low-pressure boiler and this means that the flue gas system needs to meet the „N1“ seal integrity requirement according to EN 1856-1 and EN1856-2. Please ensure a sufficient immersion depth when fitting (e.g. when using Windhager stainless steel flue systems).
- The entire exhaust line (particularly after 1 m length) should be insulated in order to prevent or minimise condensation.

## 2. For the installer

### 2.10 Installing the thermal discharge safeguard

- a) The thermal discharge safeguard, non-return valve and cleaning –T-piece must still be accessible after installation.
- b) The drain must be visible in order to check the function, therefore use a discharge funnel.
- c) It must not be possible to block the connection manually.

Connection in accordance with EN 303-5:

Minimum connection pressure of the thermal safety device: 2 bar.

- 1.....Pressure reducing valve (only with CW connection of more than 6 bar)
- 2.....Dirt trap
- 3.....Thermal discharge safeguard (opens at approx. 95 °C)
- 4.....Cleaning –T-piece
- 5.....Discharge funnel
- 6.....Immersion sleeve for the sensor of the thermal discharge safeguard
- 7.....Boiler return
- 8.....Boiler feed

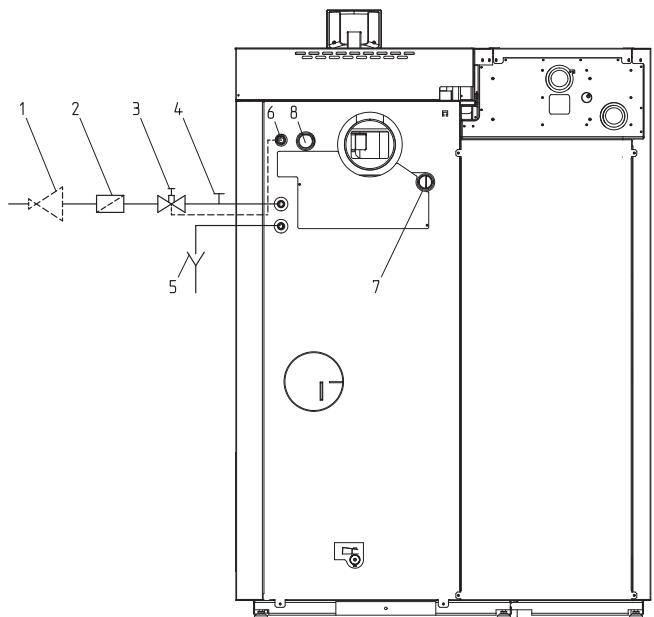


Fig. 80 Thermal safety device connection

### 2.11 Initial start-up and operating instructions

Windhager Customer Service or the customer service partner will start up the boiler first of all, and will familiarise the customer with the system operation and cleaning of the boiler, with reference to the operating manual.

#### **The following preconditions must be met before you order the initial start-up:**

- 1.) Boiler installed correctly.
- 2.) System fully wired up electrically.
- 3.) System rinsed, filled and vented – heat consumption must be possible.
- 4.) Hot water tank connected to domestic water and filled.
- 5.) Water tank filled with water (see operating manual).
- 6.) Sufficient quantity of fuel available (pellets, split logs, oil or gas).
- 7.) The customer must be present during start-up.

**The initial start-up cannot be carried out if any of these points are neglected. The customer will be charged for any unnecessary costs arising as a result.**

**Start-up and maintenance by Windhager Customer Service or a customer service partner are part of the guarantee requirements of the enclosed “guarantee limitations”.**

## 3. For the electrician

### 3.1 Electrical connections

The boiler and related accessories are designed to be installed only in dry areas (protection type IP 10). Installation of electrical components may only be performed by a qualified technician. The regulations and specifications of ÖVE, VDI, SEV and local ordinances must be followed.

---

#### Attention!



- The mains connection must be protected against short circuit with a 13 A delayed-action fuse.
- On site, the technician must install an all-pole disconnection with at least a 3 mm contact gap at the mains access point. Current-operated r.c.d. or frequency conversion protection switches are considered all-pole disconnections (ÖVE regulation).

---

The boiler is pre-wired and internally fused with a T 6.3 A fine-wire fuse to protect against short circuit. By special order, the MES modules (including boiler sensor) will be installed in the control panel and wired at the factory – Fig. 82. if there are more than 3 modules, they are installed in the wall-mount casing (accessory: MES 004) and need to be electrically wired on site.

Maximum MES module switching capacity:      Relay outputs: 230 VAC, 6 A (2 A inductive), 50 Hz  
WVF+ and solar modules with X1/X2 contact:      Solid-state relay: 230 V AC, 1 A

The electrical power is dependent upon the number of modules installed in the unit, that is, the number of actuators powered (pumps, mixing valves, etc.).

In areas with increased power surge risk (e.g. lightning strikes in regions prone to storms), we recommend installation of an appropriate surge protector.



Fig. 81 Control panel

---

#### Information!



Electrical cables must not touch heating and exhaust pipes, nor must they come in contact with non-insulated boiler components. They are to be sufficiently braced and provided with a protective tube.

---

All electrical connections are located in or behind the control panel.

The control panel is set up on 2 levels (control panel top part and control panel bottom part). The control panel top part contains the BioWIN XL main board while the control panel bottom part contains the connection terminals (screwless cage/spring-type terminals) for connecting the MES control and changeover unit. The 230 V AC power supply (mains plug) is on the rear of the control panel.

### 3. For the electrician

#### 3.1.1 Power supply 230 V AC

- Remove the right cladding cover – Fig. 83.
- The mains plugs for the unit and the suction turbine are on the rear of the control panel – Fig. 84.

We recommend using fine-wire PVC sheathed cables, e.g. H05VV-F (YMM-J) with a 3 x 1.5 mm<sup>2</sup> nominal cross-section.



Fig. 82 Removing the cladding cover

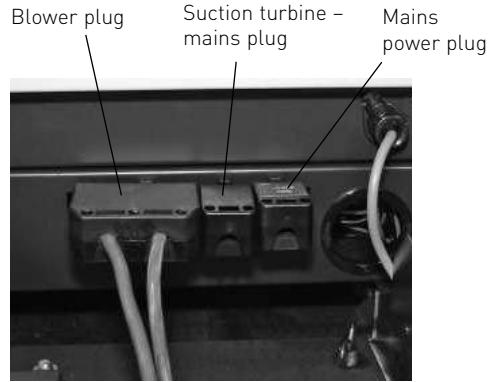


Fig. 83 Mains plugs for unit and suction turbine – view from rear

#### 3.1.2 Opening and closing the control panel

- Loosen 1 screw on top of control panel cover and take off cover – Fig. 85.
- Control panel top part folded up until it engages in lock at side – Fig. 86.

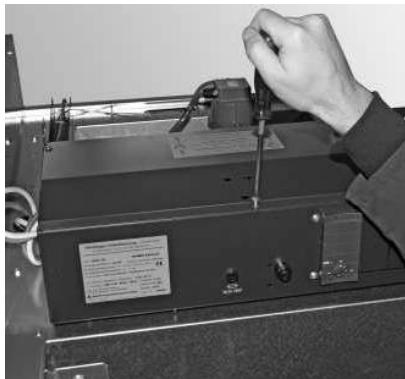


Fig. 84 Loosening screw at front and removing control panel cover

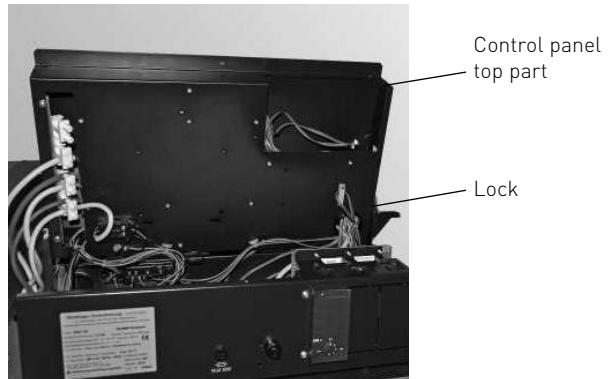


Fig. 85 Folding up control panel top part

To close the control panel top part again, loosen the side lock and fix again with screw at front.

### 3. For the electrician

#### 3.1.3 Connecting the InfoWINplus cable to the control panel

- Route InfoWINplus cable into control panel at rear right, fix with cable ties and connect plug and earthing terminal – Fig. 87.

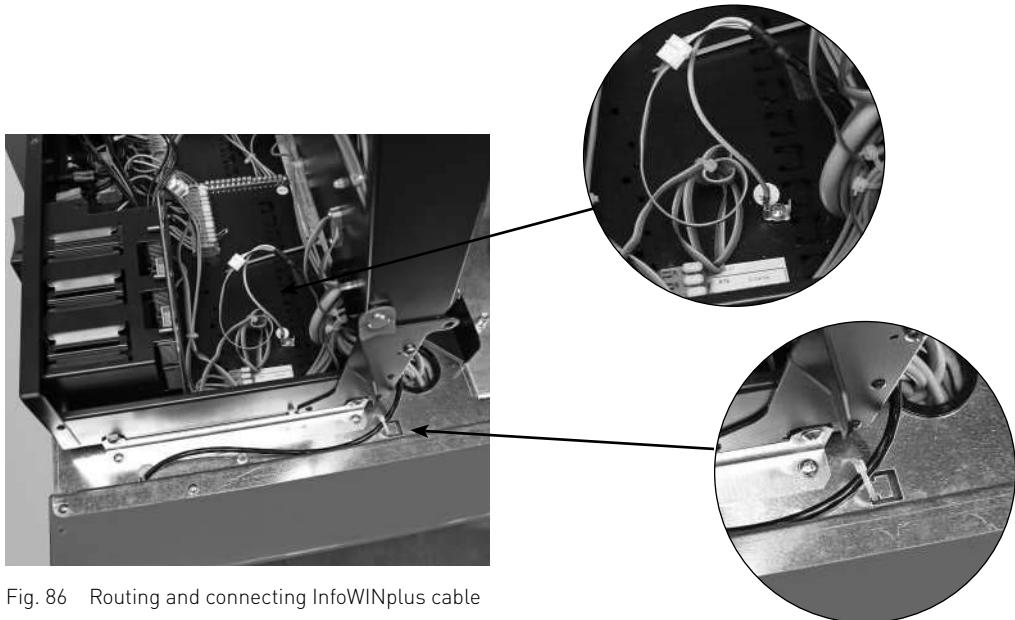


Fig. 86 Routing and connecting InfoWINplus cable

#### 3.1.4 Electrical connection for MES control, changeover unit

- The connection to the terminal blocks (screwless cage/spring-type terminals) should be made using fine-wire PVC sheathed cables – Fig. 88, 89. For connection diagrams for the suction turbine and changeover unit, see section 7.4. MES connection plan can be found on control panel.

##### Information!

Be sure to note the separate wiring of the extra-low voltage line (sensor) and low-voltage line (230 VAC)! – Fig. 89.



Fig. 87 Control panel bottom part with terminal blocks

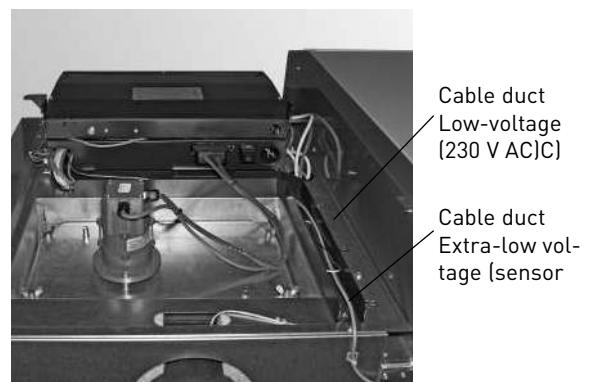


Fig. 88 Cable ducts - rear view

## 4. For the service technician

### 4.1 Start-up and operating instructions

The Windhager Customer Service or customer service partner will start up the boiler and will familiarise the customer with the system operator and cleaning of the boiler. Start-up and maintenance are part of the guarantee requirements of the „warranty conditions“ – see also section 2.11.

We recommend that you obtain a maintenance service contract.

### 4.2 Service and repair work

Service and repair may be performed only by appropriately qualified technicians.

---

#### Attention!



After the emergency shut-off switch trips, the boiler and accessories are not completely without power! When replacing system components (pumps, mixing valves, etc.) prevent all power input (e.g. by removing the mains power plug).

---

#### Please note:

Disconnect the mains power plug before opening the control panel for service or repair purposes. Remove the cladding cover – Fig. 89. Disconnect the mains power plug from rear of control panel – Fig. 90.



Fig. 89 Removing the cladding cover

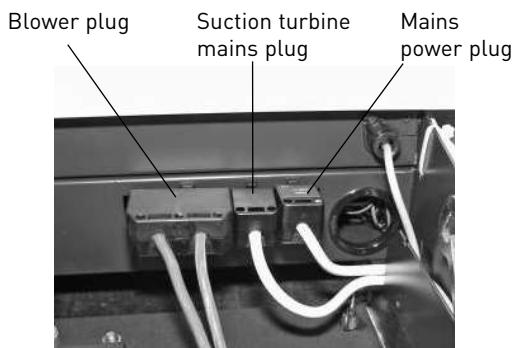


Fig. 90 Disconnecting mains power plug

### 4.3 Checking and servicing the thermal discharge safeguard

(Please inform your customer)

---

#### Attention!



The function of the thermal discharge safeguard must be checked once a year by a technician and the amount of limescale in the thermal safety device must be checked. If there is limescale in the thermal safety device then it must always be removed.

---

- Press the red cap against the valve (Fig. 91) > Water must flow out into the funnel.
- Little outflow at funnel > Limescale in thermal safety device (pump limescale remover, e.g. formic acid, through the thermal safety device).
- Thermal discharge safeguard dripping > Clean the seal on the piston and valve seat. If the seal is damaged > Replace the piston.



---

#### Note!

There is no need to remove the fitting for this purpose!

---

Fig. 91 Thermal discharge safeguard, pressing red cap against valve

#### 4. For the service technician

## 4.4 Technical data for calculating the flue gas system acc. to EN 13384-1

BioWIN XL pellet boiler	Formula symbols	Unit	BW 350		BW 450		BW 600	
			min.	max.	min.	max.	min.	max.
Nominal thermal output	$Q_N$	kW	10,0	35,0	13,5	45,0	18,0	60,0
Nominal heat load (firing thermal output)	$Q_B$	kW	11,3	38,3	15,0	49,5	20,0	66,0
Volume concentration of $\text{CO}_2$	$s (\text{CO}_2)$	%	9,1	13,3	9,2	13,5	9,3	13,8
Flue gas mass flow rate - rated load	$\dot{m}$	kg/s	0,0089	0,0215	0,0118	0,0274	0,0155	0,0358
Flue gas temperature - rated load (Average between two cleaning intervals)	$T_W$	°C	82	140	86	146	90	154
Necessary feed pressure	$P_W$	Pa	5	10	5	10	5	10
Flue gas connection diameter		mm	150		150		150	

## 4.5 Technical data – General

BioWIN XL pellet boiler	Unit	BW 350	BW 450	BW 600			
Boiler class according to EN 303-5		3	3	3			
Nominal thermal output range	kW	10,0 – 35	13,5 – 45	18 – 60			
Radiation losses	Rated load	kW	0,53	0,6			
Boiler water volume	l	120					
Water-side resistance $\Delta T = 20 \text{ K}$ $\Delta T = 10 \text{ K}$	mbar	6,8 24,7	10,8 39,5	18,5 67,5			
Boiler temperature control range	°C	60 – 85					
Max. operating pressure	bar	3					
Test pressure	bar	4,5					
Integral fuel hopper	l kg	208 135					
Net weight of fully assembled boiler	kg	700					
Transport weight of boiler part	kg	480					
Dimensions W x D x H	mm	1220 x 1000 x 1800					
Installation dimensions	mm	780 x 980 x 1800					
<b>Electrical power consumption of pellet feed:</b>							
Automatic pellet feed	W	1748					
Maximum current consumption, pellet feed	A	8,1					
<b>Values from type test</b>							
Testing office TÜV SÜD Munich, test report no.: H-C4 1190 - 00/11 and H-C5 1190 - 00/11							
Firing efficiency (100-qA)	Rated load Part load	%	93,1 94,7	91,8 92,8			
Boiler efficiency	Rated load $\eta_W$	%	91,2	90,7			
Flue gas temperature	Rated load Part load	°C	141 89	164 99			
<b>Electrical power consumption of pellet boiler:</b>							
Maximum current consumption	A	9,6					
Maximum for igniting	W	2186					
Ignition process	Wh	409	409	409			
Heating mode	Rated load Part load	W	103 43	122 53			
Idle operation	W	7					

## 4.6 Service level

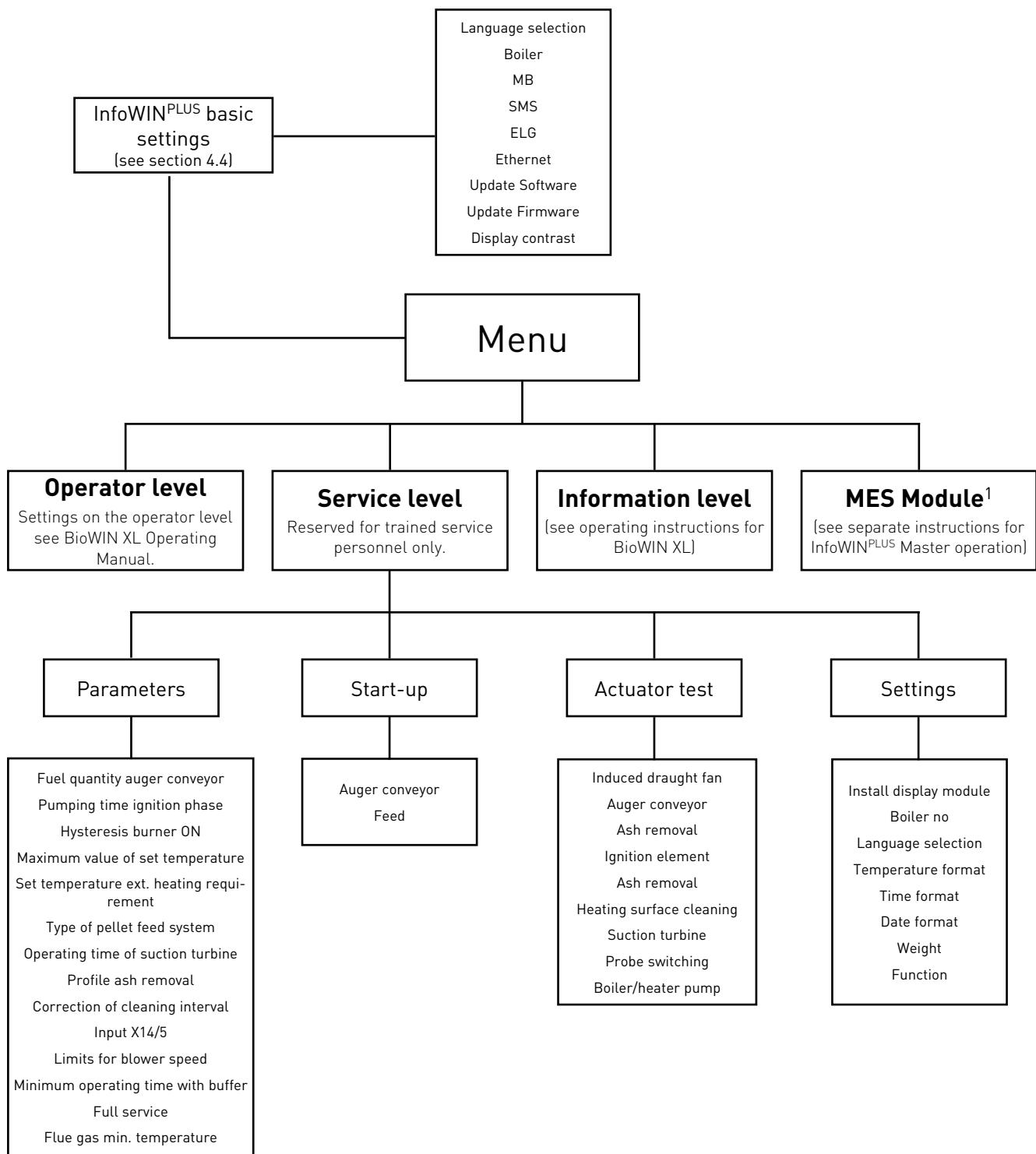
System parameters, start-up or actuator test can be displayed, modified and/or performed on the Service level.



### Information!

Only trained service personnel may perform system modifications on the Service level.

Structure on the Service level:



<sup>1</sup> Only displayed when an MESplus control is present and this has been adjusted by a trained service technician in the basic settings.

## 4. For the service technician

### Service level

Pressing the **Menu** button (Fig. 92) shows the „Operator level“, „Service level“, „Information level“ and „MES Module“ in the display – Fig. 93.

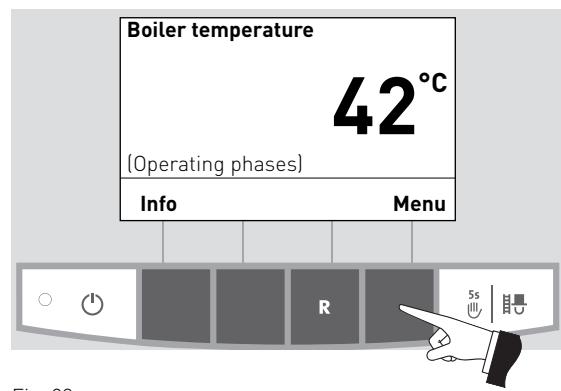


Fig. 92

Use the **arrow** buttons to select the “Service level” sub-menu – Fig. 93.

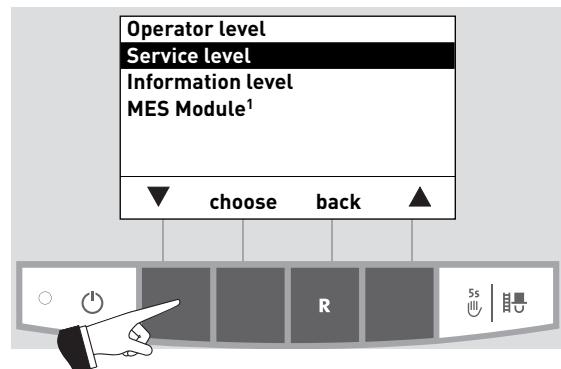


Fig. 93

Press and hold the **choose** button for 5 seconds (Fig. 94). The display shows „Service level only for trained service personnel“ – Fig. 95.

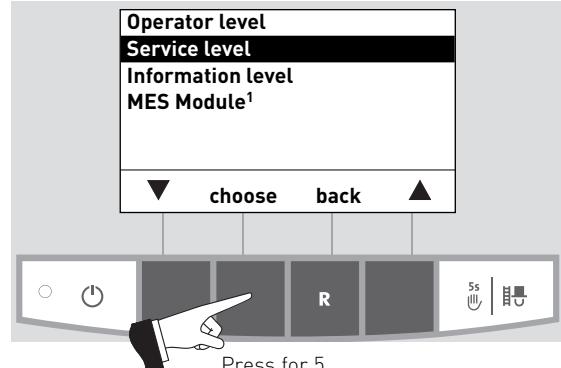


Fig. 94

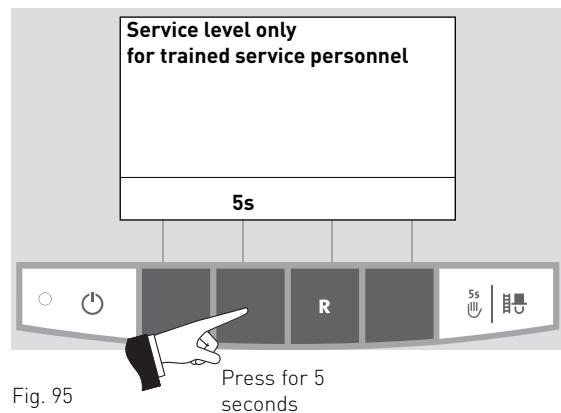


Fig. 95

<sup>1</sup> Only displayed when an MESplus control is present and this has been adjusted by a trained service technician in the basic settings.

#### 4. For the service technician

Select the required item, „Parameters“, „Start-up“, „Actuator test“ or „Settings“ and confirm by pressing the **choose** button – Fig. 96.

For further settings, see sections 4.6.1 - 4.6.4.

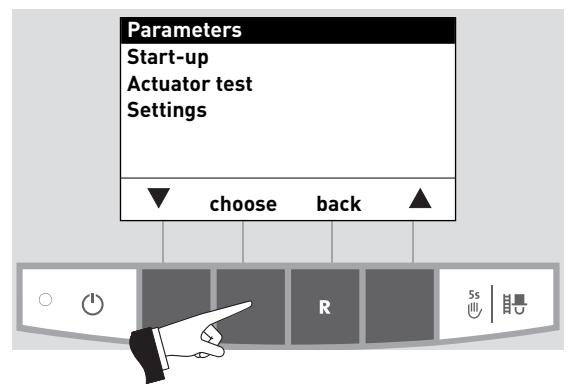


Fig. 96

The menu item or sub-menu item is exited by pressing the **back** button or by waiting 10 minutes – Fig. 97.

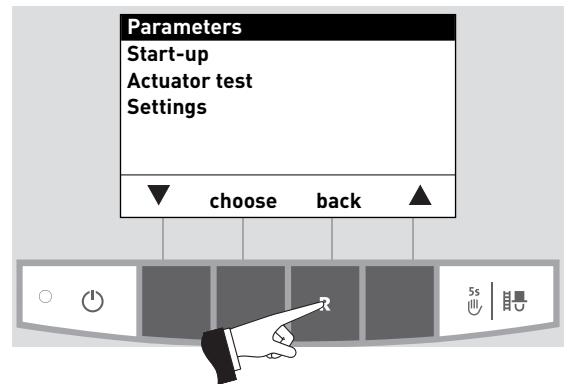


Fig. 97

## 4. For the service technician

### 4.6.1 Parameters

The following parameters can be selected with the **arrow** buttons, then confirmed using the **choose** button.

- Number of burner starts
- Fuel quantity auger conveyor
- Delivery time ignition phase
- Hysteresis Burner ON
- Maximum value of set temperature
- Set temperature ext. heating requirement
- Type of pellet feed system
- Operating time of suction turbine
- Profile ash removal
- Correction of cleaning interval
- Flue gas thermostat or air intake/ exhaust flap
- Limits for blower speed
- Minimum operating time with buffer

#### Number of burner starts

The number of burner starts of the BioWIN XL is displayed.

Number of burner starts	1.350
back	

Fig. 98

#### Fuel quantity auger conveyor

The calculated fuel quantity (actual value) and the range is displayed in kg/h, and can be adjusted.

	BioWIN XL	BW 350 / 450 / 600
Actual value	Factory setting: Setting range:	21 kg/h ±5 kg of range
Range	Factory setting: Setting range:	21 kg/h 19 – 30 kg/h
Correction	Factory setting: Setting range:	0 ±5

Fuel quantity	▼ choose back ▲
Auger conveyor	
Actual value 19.5 kg	

Fig. 99

#### Delivery time ignition phase

Fuel quantity in the ignition phase.

BioWIN XL	BW 350	BW 450	BW 600
Factory setting:	240 s	280 s	210 s
Setting range:	190 – 290 s	230 – 330 s	160 – 260 s

Delivery time ignition phase	- save back +
Actual value 240 s	
min. 190 s	

Fig. 100

#### Hysteresis Burner ON

Switching hysteresis for burner control.

Factory setting: 5 K  
Setting range: 0 – 20 K

Hysteresis Burner ON	- save back +
Actual value 5 K	
min. 0 K	

Fig. 101

## 4. For the service technician

### Maximum value of set temperature

This is the maximum setpoint achievable in normal heating operation.

Factory setting: 75 °C  
Setting range: 60 – 85 °C

Maximum value of set temperature	
Actual value	75 °C
min.	60 °C
max.	85 °C
- save back +	

Fig. 102

### Set temperature ext. heating requirement

This is the set temperature for external heating requirement.

Factory setting: 70 °C  
Setting range: 35 – 85 °C

Set temperature ext. heating requirement	
Actual value	70 °C
min.	35 °C
max.	85 °C
- save back +	

Fig. 103

### Type of pellet feed system

Setting for whether operation is without feed system, with 2 or 8 probes or with mixer (buried tank).

Factory setting: without feed system

The following settings are available:

For changeover unit with 3 probes: Suction turbine with 2 probe  
Suction turbine with 3 probe  
For changeover unit with 8 probes: Suction turbine with 4 probe  
Suction turbine with 6 probe  
Suction turbine with 8 probe  
For buried tank with mixer Suction turbine with mixer

Type of pellet feed system without feed system	
Suction turbine with 2 probe	
Suction turbine with 3 probe	
Suction turbine with 4 probe	
Suction turbine with 6 probe	
▼ choose back ▲	

Fig. 104

Type of pellet feed system Suction turbine with 8 probe	
Suction turbine with mixer	
▼ choose back ▲	

Fig. 105

### Operating time of suction turbine

Factory setting: 120 sec.  
Einstellbereich: 90 – 240 sec.

Operating time of suction turbine	
Actual value	120 sec.
min.	90 sec.
max.	240 sec.
- save back +	

Fig. 106

### Profile ash removal

This setting can be used to adjust the removal of ash from the burner pot for different levels of pellet quality.

Factory setting: Stage 1

Stage 0	to	Stage 3
very low proportion of ash		very high proportion of ash (possibly formation of slag)

Profile ash removal Stage 0	
Stage 1	
Stage 2	
Stage 3	
▼ save back ▲	

Fig. 107



### Information!

Restore factory settings for each delivery of pellets.

## 4. For the service technician

### Correction of cleaning interval

The cleaning interval is basically dependent on the proportion of ash in the pellets and the profile ash removal. This adjuster can be used to extend or shorten the cleaning interval by +/- 50 %.

The standard setting is a cleaning interval determined by testing.

Factory setting: 0 %  
Setting range:  $\pm 50\%$

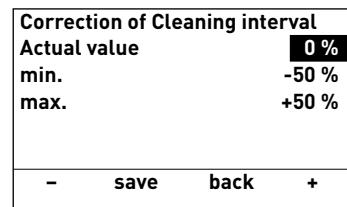


Fig. 108



#### Attention!

If too long a cleaning interval is selected, the ash container may overfill.

### Flue gas thermostat or Air intake/ exhaust flap

This adjuster can be used to change the flue gas thermostat function (factory setting) to air intake/ exhaust flap.

Factory setting: Flue gas thermostat

With air intake/ exhaust flap setting:

Factory setting: Operating time 300 sec.  
Setting range: 30 – 600 sec.

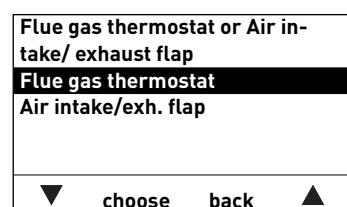


Fig. 109



#### Information!

The set operating time should be twice as long as the actual operating time of the Air intake/exh. flap.

### Limits for blower speed

BioWIN XL		BW 350		BW 450		BW 600	
		Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
Factory setting:	rpm	750	2100	1100	2600	1050	2700
Setting range:	rpm	750–950	2000–2400	1000–1300	2600–2700	950–1250	2600–2700

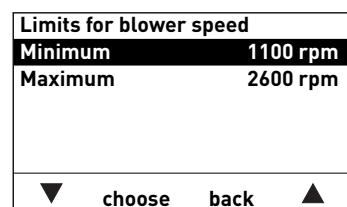


Fig. 111

### Minimum operating time with buffer

This function is not yet available.

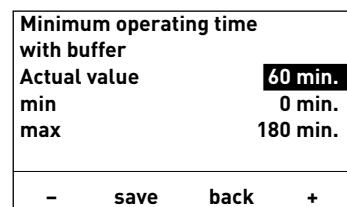


Fig. 112

## 4. For the service technician

### 4.6.2 Start-up

The auger conveyor and the feed can be selected on the Start-up level with the **arrow** buttons, then confirmed or selected using the **choose** button. A self-test is started at the end of the start-up.

#### Auger conveyor

The auger conveyor can be switched on for 6 minutes.

#### Feed

Depending on the set feed system, the feed and each probe incl. purging can be started up.

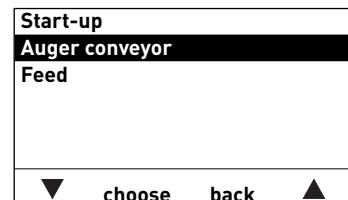


Fig. 113

### 4.6.3 Actuator test

The following actuators can be selected with the **arrow** buttons, then confirmed and started using the **choose** button. The actuators are switched off again after 1 minute. A self-test is started at the end of an actuator test.

- Induced draught fan
- Auger conveyor
- Ash removal
- Ignition element
- Ash removal
- Heating surface cleaning
- Suction turbine
- Probe switching
- Air intake/exh. flap
- Boiler pump

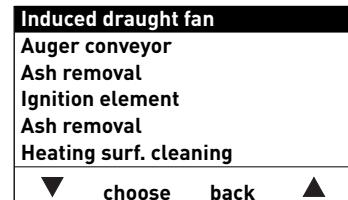


Fig. 114

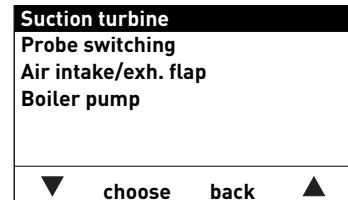


Fig. 115

### 4.6.4 Settings

This sub-menu contains the following settings:

- Install display module
- Language selection
- Temperature format
- Time format
- Date format
- Weight

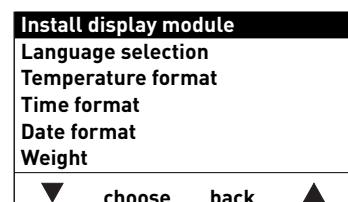


Fig. 116

## 4. For the service technician

### Install display module

Is not needed with an individual BioWIN XL boiler, only needs to be used with a cascade system – see “Planning and assembly” instructions for pellet cascade.

Start installation procedure
Please press LON button on automatic firing device briefly
back

Fig. 117

### Language selection

The InfoWINplus can show the display texts in various languages. The language required can be selected in this sub-menu.

Language selection
Deutsch
English
Française
Italiano
▼ choose back ▲

Fig. 118

### Temperature format

All temperatures are displayed in the chosen format (e.g. 30.6 °C or 87.0 °F).

Factory setting: °C  
Selection: °C und °F

Temperature format
°C
°F
▼ choose back ▲

Fig. 119

### Time format

The time is displayed in the chosen format (e.g. 14:12 or 02:12 PM).

Factory setting: 24 h  
Selection: 24 h or 12 h

Time format
24h
12h
▼ choose back ▲

Fig. 120

### Date format

The date is displayed in the chosen format (e.g. Wed 17.02.2010 or Wed 02/17/2010).

Factory setting: DD.MM.YYYY  
Selection: DD.MM.YYYY  
MM/DD/YYYY

Date format
DD.MM.YYYY
MM/DD/YYYY
▼ choose back ▲

Fig. 121

### Weight

The weight is displayed in the chosen format (e.g. 6.5 kg or 14.3 lbs).

Factory setting: t, kg  
Selection: t, kg or tn. sh., lbs

Weight
t, kg
tn. sh., lbs
▼ choose back ▲

Fig. 122

## 4.6.5 Installation of MESplus modules

Display if an MESplus module is installed (connected) or uninstalled (disconnected).

Installation procedure active
[Animated symbol]

Fig. 123

## 4.7 InfoWINplus basic settings

The basic settings are used to

- set whether the InfoWINplus controls a wood or pellet boiler or whether it is solely used as master operation;
- switch the master operation functions on and off;
- activate/deactivate remote switching by text message.

The basic settings are undertaken in the factory before delivery as per the order.



### Information!

Only trained service personnel may perform modifications in the basic settings.

The display switches to the basic settings when „Version ...“ (Fig. 124) is displayed and the button (shown in Fig. 124) is pressed for 5 seconds.

„Version ...“ is displayed,

- if the „R“ button is pressed for 5 seconds on a standard display – Fig. 125;
- if the InfoWINplus was de-energised and then switched on.

The following settings are available in the basic settings:

- Language selection
- Boiler
- MB
- SMS
- ELG
- Ethernet
- Update Software
- Update Firmware

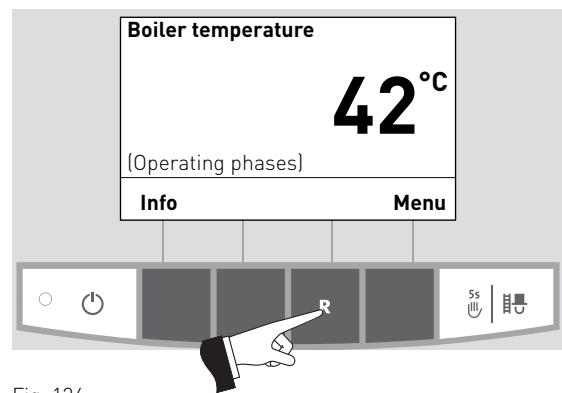


Fig. 124

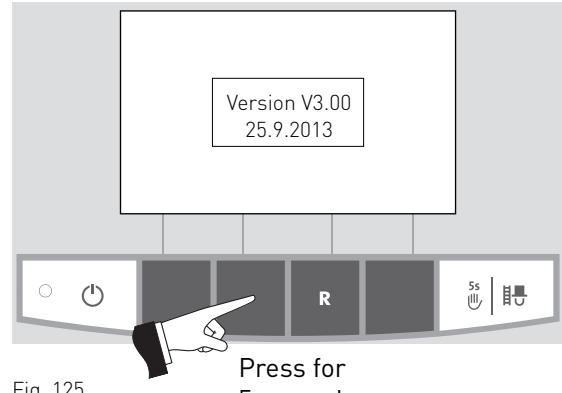


Fig. 125

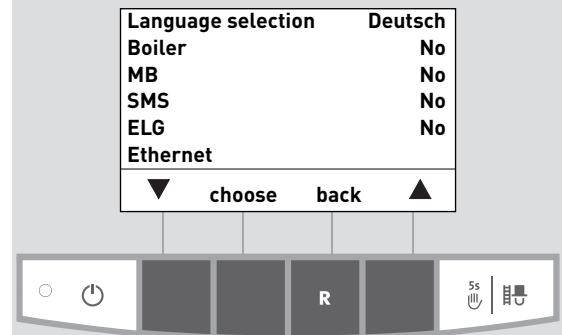


Fig. 126

## 4. For the service technician

### Language selection

The InfoWINplus can show the display texts in various languages. The language required can be selected in this sub-menu.

Language selection		
Deutsch		
English		
Française		
Italiano		
▼	choose	back ▲

Fig. 130

### Boiler

Setting to determine what kind of boiler the InfoWINplus controls, e.g. wood or pellet boiler or whether it is solely used as master operation.

Factory setting: is set in the factory before delivery as per the order.

Selection: Pellets: BioWIN, BioWIN XL, FireWIN, VarioWIN usw.  
Wood: LogWIN, SilvaWIN usw.  
Heating oil: JetWIN, EcoWIN  
No No boiler, e.g. for MultiWIN, simply master operation for remote switching

Boiler		
Pellets		
Wood		
Heating oil		
No		
▼	save	back ▲

Fig. 127

### MB (Master operation)

Setting to define whether MESplus system control is present.

Factory setting: is set in the factory before delivery as per the order.

Selection: yes: with MESplus system control  
no: no MESplus system control

MB		
Yes		
No		
▼	save	back ▲

Fig. 128

### SMS

Setting to define whether remote switching by text message is possible.

Factory setting: is set in the factory before delivery as per the order.

Selection: yes: with remote switching  
no: no remote switching

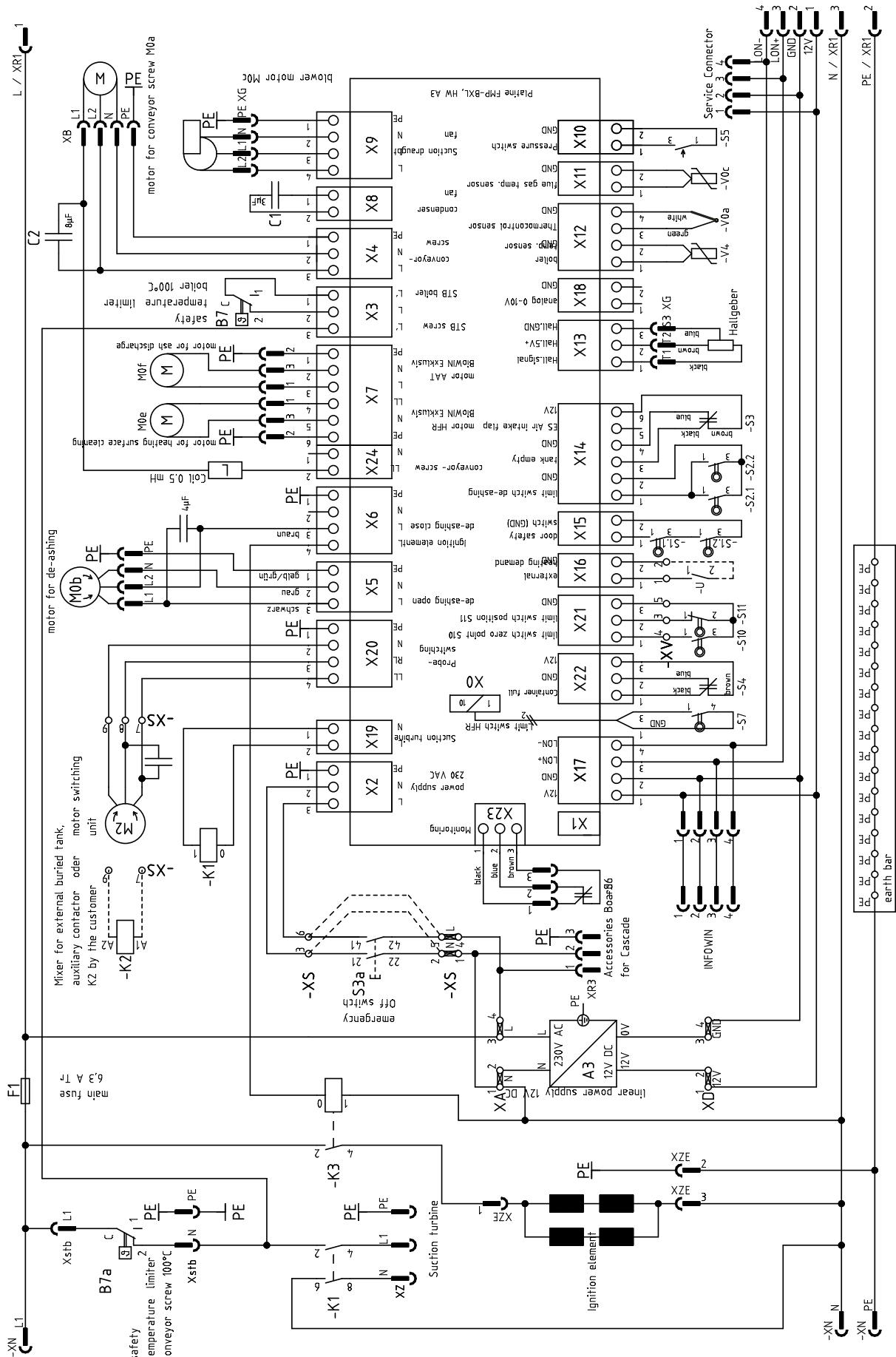
SMS		
Yes		
No		
▼	save	back ▲

Fig. 129

### ELG, Ethernet, Update Software, Update Firmware

These functions are not yet available.

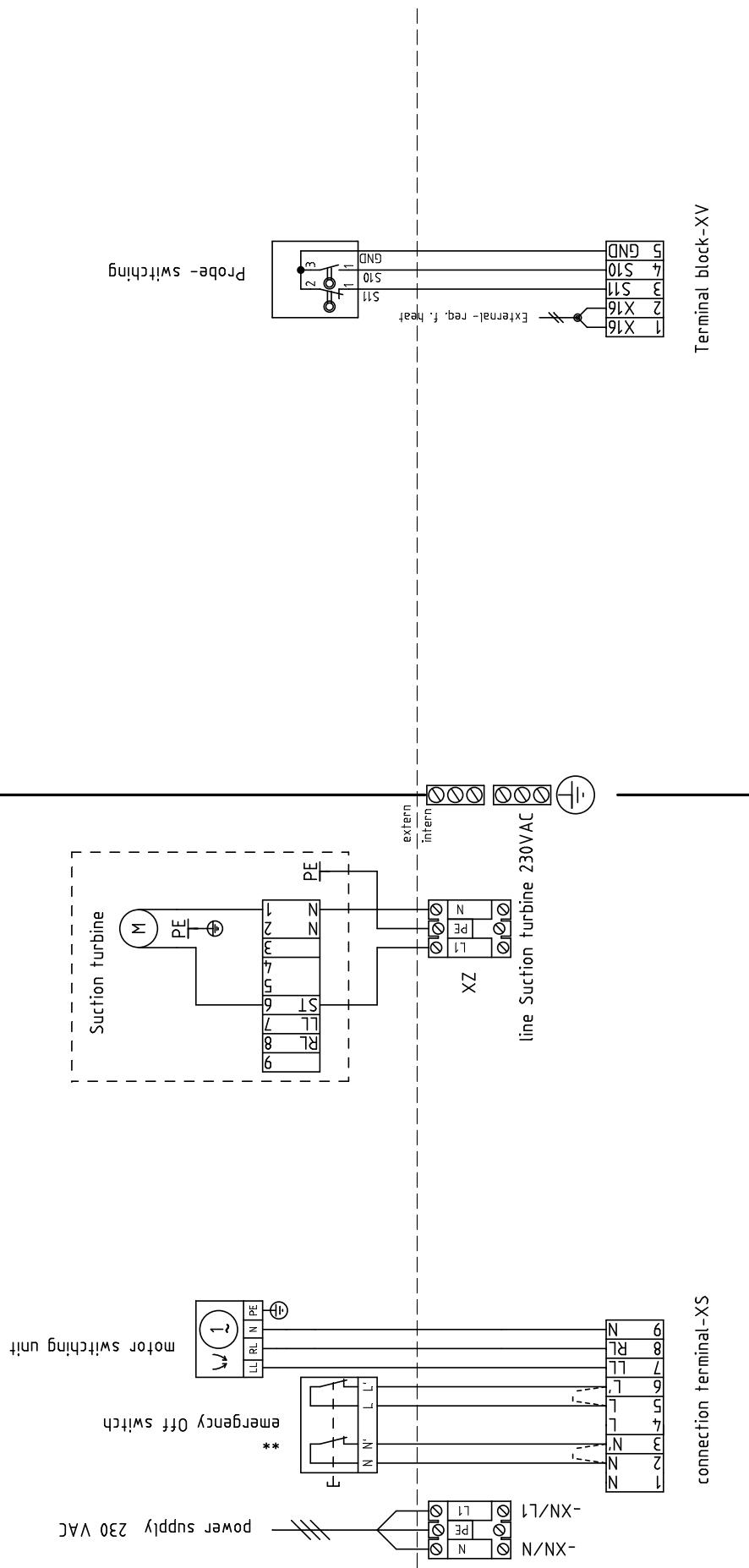
## 4.8 Basic BioWIN XL circuitry



## 4.9 BioWIN XL connection diagram

Low voltage 230 VAC

Extra low voltage - sensor



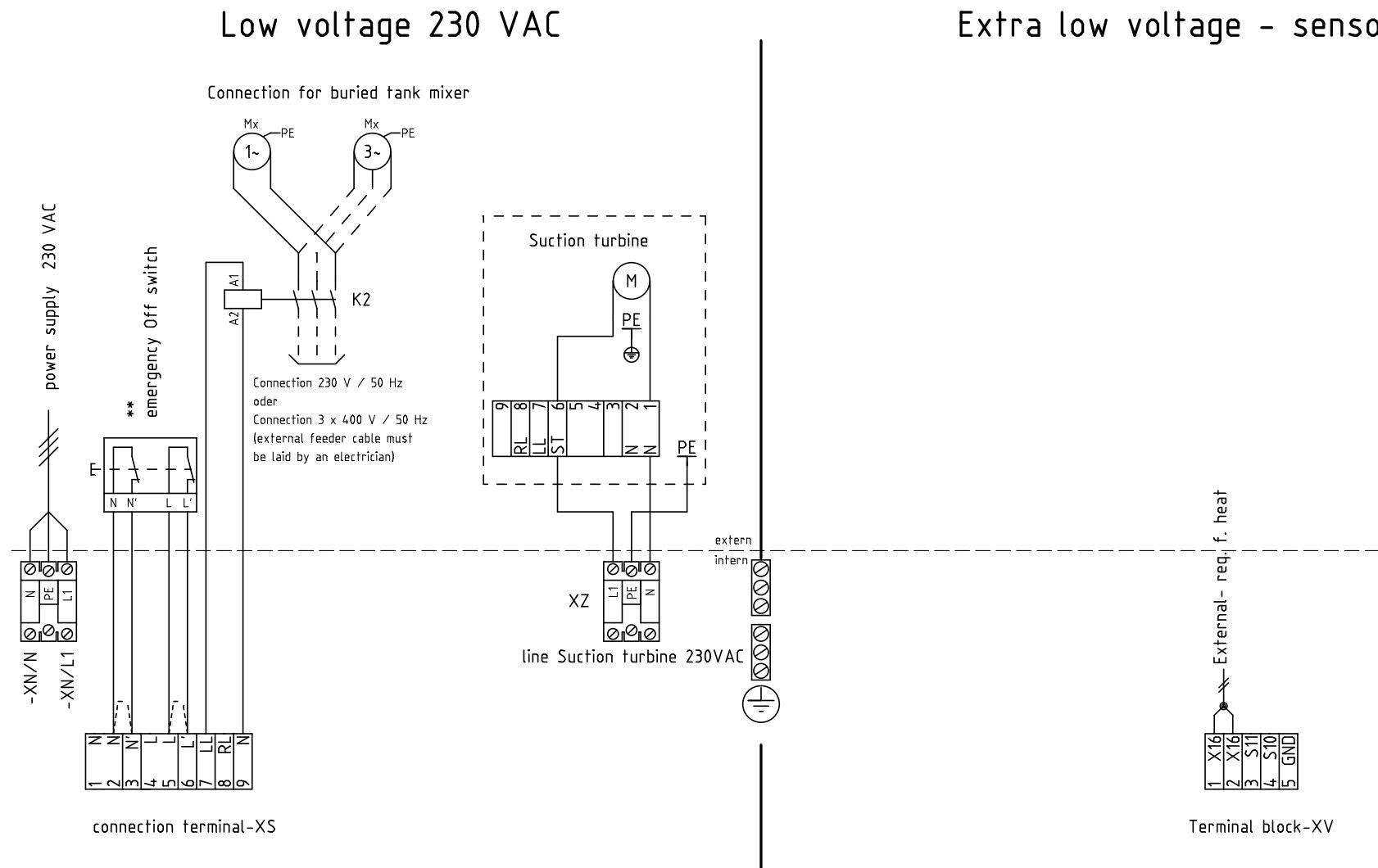
\* ...opt./accessories

\*\*...remove wire-bridge when connecting

093149/00

## 4.10 BioWIN XL pellet feed connection diagram with mixer for buried tank

Operation with a mixer must be set on the service level –  
see section 4.6.1 Parameters: Type of pellet feed system.



### Information!



K2 = Auxiliary contactor 230 VAC by the customer  
Two separate cables are needed to connect the changeover unit.

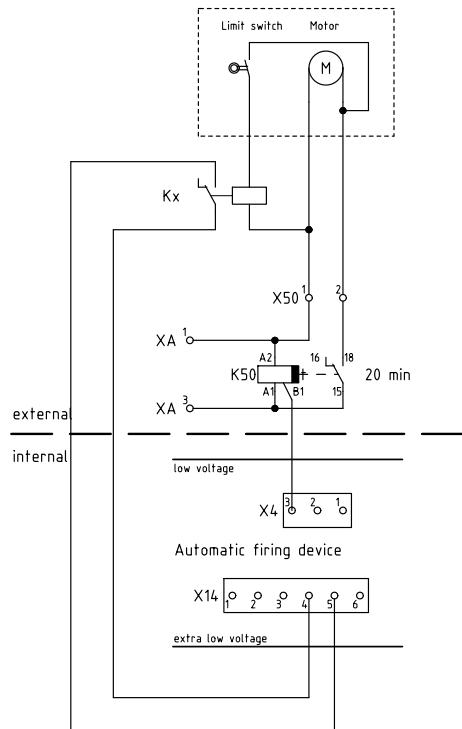
- Cable for limit switch (extra-low voltage): min. 3 x 0.5 mm<sup>2</sup> (no earth), we recommend using a shielded cable if the cable is longer than 5 m.
- Cable for changeover unit motor (low voltage): 4 x 1.5 mm<sup>2</sup>.

\* ...opt./accessories  
\*\*...remove wire-bridge when connecting

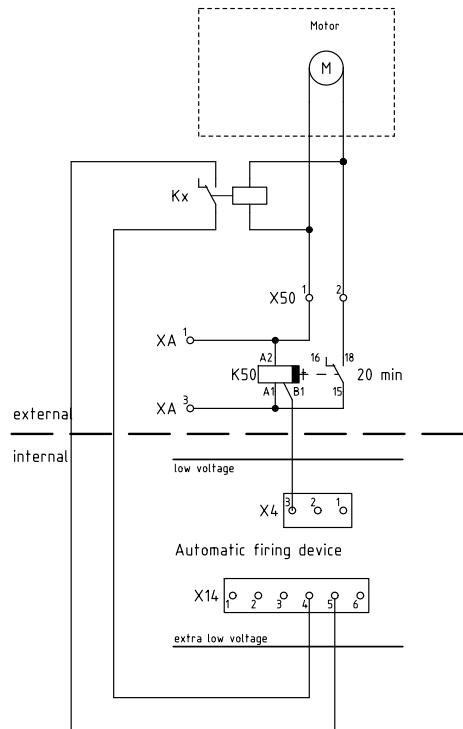
## 4.11 Connection diagram for air intake/exhaust flap

The air intake/exhaust flap is directly connected to the main PCB (see basic circuit diagram 4.8) at plugs X4 (motor) and X14 (limit switch). See section 4.6.1 Parameters; Flue gas thermostat or Air intake/ exhaust flap.

Air intake/exhaust flap with limit switch



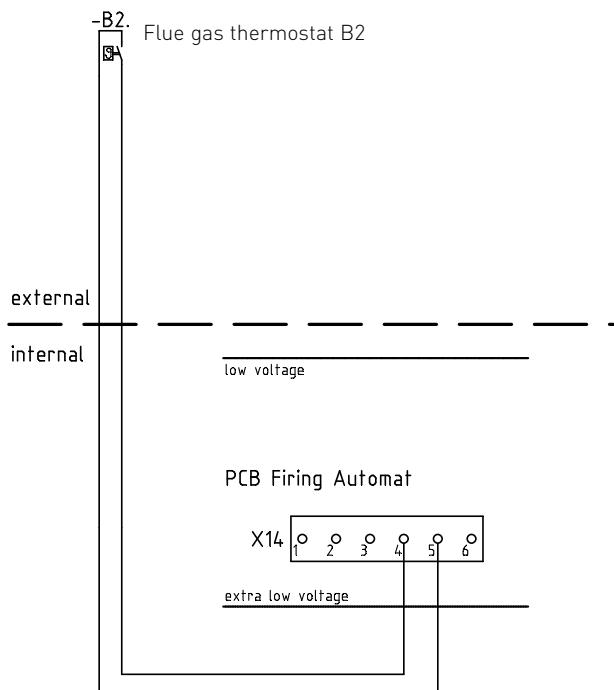
Air intake/exhaust flap without limit switch



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## 4.12 Connection diagram for flue gas thermostat

The flue gas thermostat is directly connected to the main PCB (see basic circuit diagram 4.8) at plugs X4 (motor) and X14 (limit switch). See section 4.6.1 Parameters; Flue gas thermostat or Air intake/ exhaust flap.



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**WARRANTY**

The warranty requires that the boiler and related accessories be properly installed and started by Windhager Customer Service or Customer Service Partner; otherwise the manufacturer's warranty will not be honored. Malfunctions resulting from improper operation or adjustment as well as use of poor or not recommended fuel types are not covered by the warranty. Further, the warranty shall be void if equipment other than those provided by Windhager are installed. The special warranty restrictions for your system are available in the "Warranty Conditions" folder supplied with your boiler.

Start-up and regular maintenance following the terms of the "Warranty Conditions" will assure safe, environmentally friendly and economical operation of your system. We recommend that you obtain a maintenance service contract.



# Operating Manual



## **BioWIN** **Pellet central heating boiler**

## **USER MANUAL FOR INDEPENDENT PELLET or CHIP FIRED BOILERS**

### **SUPPLEMENTARY OPERATING INSTRUCTIONS FOR THE UK MARKET TO BE READ IN CONJUNCTION WITH THOSE IN THE INSTRUCTION BOOKLET**

**READ THE INSTRUCTION BOOK AND THESE INSTRUCTIONS  
CAREFULLY BEFORE USING THE BOILER**

#### **WARNING NOTE**

Properly installed, operated and maintained this stove will not emit fumes into the dwelling. Occasional fumes from de-ashing and re-fuelling may occur. However, persistent fume emission is potentially dangerous and must not be tolerated. If fume emission does persist, then the following immediate action should be taken: -

- (a) Open doors and windows to ventilate the room and then leave the premises.
- (b) Let the fire go out.
- (c) Check for flue or chimney blockage and clean if required
- (d) Do not attempt to relight the fire until the cause of the fume emission has been identified and corrected. If necessary seek expert advice.

The most common cause of fume emission is flueway or chimney blockage. For your own safety these must be kept clean at all times.

#### **IMPORTANT NOTES**

##### **General**

Before lighting the boiler check with the installer that the installation work and commissioning checks described above have been carried out correctly and that the chimney has been swept clean, is sound and free from any obstructions. As part of the boilers' commissioning and handover the installer should have shown you how to operate the boiler correctly.

Do not light the boiler if there is a possibility that any part of the heating system may be frozen

Please make sure the ash-pit door and the hopper lid/charging door are firmly closed at all times whilst the boiler is in operation.

In the event of the appliance failing to light after the initial ignition light-up process, please switch off the appliance immediately and contact a qualified engineer for resolution of the issue. Please do not attempt to re-light the boiler until the issue has been signed off by the engineer.

##### **CO Alarm**

Your installer should have fitted a CO alarm in the same room as the appliance. If the alarm sounds unexpectedly, follow the instructions given under "Warning Note" above.

## Boiler Access

Access to the boiler should be restricted for children, aged and/or infirm persons by way of a lockable door to the room in which the boiler is installed.

## Chimney cleaning

The chimney should be swept at least twice a year. It is important that the flue connection and chimney are swept prior to lighting up after a prolonged shutdown period. Where the chimney is believed to have served an open fire installation it is possible that the higher flue gas temperature from a closed appliance may loosen deposits that were previously firmly adhered, with the consequent risk of flue blockage. It is therefore recommended that the chimney be swept a second time within a month of regular use after installation.

In situations where it is not possible to sweep through the boiler the installer will have provided alternative means, such as a soot door. After sweeping the chimney the boiler flue outlet and the flue pipe connecting the boiler to the chimney must be cleaned with a flue brush.

## Periods of Prolonged Non-Use

If the boiler is to be left unused for a prolonged period of time then it should be given a thorough clean to remove ash and unburned fuel residues. Empty the hopper of unburned fuel. To enable a good flow of air through the appliance to reduce condensation and to avoid door seals becoming stuck and subsequently damaged, leave the filling hatch and combustion chamber doors slightly ajar. These actions will reduce the possibility of unnecessary damage and corrosion.

## Extractor fan

There must not be an extractor fan fitted in the same room as the boiler as this can cause the boiler to emit smoke and fumes into the room

## Aerosol sprays

Do not use an aerosol spray on or near the boiler when it is alight.

## Use of operating tools

Always use the operating tools provided when handling parts likely to be hot when the boiler is in use.

## Chimney Fires

If the chimney is thoroughly and regularly swept, chimney fires should not occur. However, if a chimney fire does occur turn off the boiler immediately and isolate the mains electricity supply, and tightly close the doors of the boiler. This should cause the chimney fire to go out. If the chimney fire does not go out when the above action is taken then the fire brigade should be called immediately. Do not relight the boiler until the chimney and flueway have been cleaned and examined by a professional.

## Permanent air vent

The boiler requires a permanent and adequate air supply in order for it to operate safely and efficiently. In accordance with current Building Regulations the installer may have fitted a permanent air supply vent into the room in which the boiler is installed to provide combustion air. This air vent should not under any circumstances be shut off or sealed.

## **USER OPERATING INSTRUCTIONS**

Please read the important notices given above before referring to the main instruction book for detailed operating instructions.

### **Frequency of cleaning ash and residues from combustion chamber and ash-box**

The owner is required to regularly carry out this cleaning operation and the frequency will depend on the heating load. When first put to use the boiler should be checked on a daily basis and experience will show how often this will eventually be required. Remember also that during the main heating season the cleaning interval will shorten as the load on the boiler will be higher.

### **Recommended fuels**

The boiler is designed to burn only specialized either compressed wood pellets or wood chips which are detailed in the main instruction book. Under no circumstances should you attempt to burn any other type of fuel.

### **General Maintenance**

It is important that any glass or other decorative surfaces are kept clean using the appropriate cleaning materials and techniques as to not damage the internal or external finishes of the boiler.

### **Spare Parts**

For more information on obtaining spare parts, please revert to the specific page of the manufacturer's original instruction manual or contact details provided.

### **HETAS Ltd Approval**

This appliance has obtained HETAS Ltd approval for burning either compressed wood pellets or wood chips as specified in the main instruction manual. Approval does not cover the use of other fuels either alone or mixed with the recommended fuel, nor does it cover instructions for the use of other fuels.

### **Contact Details**

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# Important information for system operators

Dear Heating System Owners,

We would like to congratulate you on your new environmentally friendly boiler system. With the purchase of this high-quality product by WINDHAGER ZENTRALHEIZUNG, you have selected a system that provides more comfort and optimised fuel consumption while utilising an environmentally friendly means of saving resources. Your boiler was manufactured under strict ISO 9001 certified standards, was subjected to extensive tests and all its components are recyclable.

On the following pages we have provided specific information and important tips regarding system operation, unit functions and cleaning. Please pay close attention to these instructions. Familiarity with the material in this document will allow you to enjoy long-term operation of the unit. We wish you all the best with your WINDHAGER boiler!

Cordially,

WINDHAGER ZENTRALHEIZUNG

## 1.1 Safety precautions

The boiler and related accessories are state of the art and meet all applicable safety regulations.

Your boiler and all accessories operate using 230 V AC electrical current. Improper installation or repair can pose the danger of life-threatening electrical shock. Installation may be performed only by appropriately qualified technicians.

### Caution symbols

Please take careful note of the following symbols in this Operating Manual.



Ignoring the warnings identified can lead to **personal injury**.



Ignoring the warnings identified can lead to **malfunction of, or damage to the boiler or heating system**.

## 1.2 Fuel

The boilers are designed to burn the following fuels:

Pellets according to ÖNORM M7135 or DINplus.

Significant criteria based on the standards are as follows:

Diameter 6 mm	Length 80% between 15 – 30 mm
Smooth surface	Density at least 1.1 kg/dm <sup>3</sup>
Residual moisture content max. 10%	Energy content min. 18 MJ/kg = 5 kWh/kg (in water-free condition)
Ash content max. 0.5%	Abraded particles max. 2.3%
Chemical/synthetic binding agents are strictly prohibited	No impurities from varnish or paint residues, etc.

The pellets must be stored in a dry place so that they can be transported without problems and in order to achieve trouble-free operation with optimum combustion and at maximum efficiency.

# Important information for system operators

## 1.3 Start-up and maintenance

Please permit Windhager Customer Service or have one of our customer service PARTNERS put your new boiler into service. In this way, all functions of the new unit will be thoroughly checked; you will also benefit from the detailed information provided by the system installer. Installation by a qualified technician as well as the maintenance required by the guarantee limitations and undertaken by WINDHAGER Customer Service or a customer service partner will guarantee the optimal use and service life of your boiler system. This is the only way to assure the benefits of this technologically advanced boiler and guarantee safe, environmentally friendly and energy-saving system operation.

The following preconditions must be met before you order the initial start-up:

- 1.) Boiler installed correctly.
- 2.) System fully wired up electrically.
- 3.) System rinsed, filled and vented – heat consumption must be possible.
- 4.) Boiler connected to domestic water and filled.
- 5.) Sufficient quantity of fuel available (pellets, split logs, oil or gas).
- 6.) The customer must be present during start-up.

**The initial start-up cannot be carried out if any of these points are neglected. The customer will be charged for any unnecessary costs arising as a result.**

**Start-up and maintenance by WINDHAGER Customer Service or a customer service partner are part of the guarantee requirements of the enclosed “guarantee limitations”.**

**Note:** During the first few weeks after start-up, condensation can occur in the combustion chamber, ash pan and on the heating surfaces. This has no effect on the function and service life of the boiler.

## 1.4 Functional test

EN 12828 and ÖNORM B8131 require that the function of the system and related safety equipment be checked and certified yearly by a qualified technician (installer, heating system contractor).

At two-year intervals, the heating water condition must be checked (ÖNORM H 5195-1) by a heating expert (installer) (see FireWIN installation instructions – Heating water); this is to prevent corrosion and sediment accumulation in the heating system and boiler. For systems using more than 1,500 litres of water (e.g., systems with accumulator tanks), this inspection is required on an annual basis.

In the event of repair work requiring a change of water in the heating system, the heating water is to be checked within 4 to 6 weeks after such work.

Corrosion and sediment resulting from improper heating water are not covered by the guarantee and warranty.

# Important information for system operators

## 1.5 Filling the pellet store



The pellet flue-connected stove must be switched off **correctly** at least 15 minutes before the store is filled – Fig. 2.

**Press the ON/OFF button. Never switch off using the emergency OFF switch!**

Pressing one of the six buttons firstly switches just the lighting and display on. The boiler is only switched off when the button is pressed for the 2nd time. Wait until burnout mode has finished (not indicated on the display) and open the combustion chamber doors.

During filling, negative pressure is created in the pellet store and this can cause burn-back in the pellet boiler. Therefore, the boiler must be stopped from operating during the filling procedure.

**Tip:** To prevent negative pressure arising in the pellet boiler, remove the inspection cover (Fig. 3) and leave open during the filling process.



Fig. 2     Switching off BioWIN



Fig. 3     Opening inspection cover during the filling process

## 1.6 Sources of danger

### 1.6.1 Power failure (or if the blower is not running)



Do not open the combustion chamber door, there is an increased risk of deflagration when opening the combustion chamber door. A self-test is performed following a power failure during combustion and then operation is continued automatically.

### 1.6.2 Burner pot



Never fill the burner pot with pellets by hand. Excessive combustion material in the burner pot means that the pellets will not be ignited optimally. Too much low temperature carburisation gas will be generated and this can lead to deflagration.

# Operation

## 2.1 Functional description, function elements and operating controls

The BioWIN pellet boiler and the Modular Energy System MES or the REG standard control combine to form a perfect unit. The BioWIN automatically fires when the control system signals a heating requirement. Following "purging" (safety function), ignition starts and the pellet metering auger switches on. The burner pot is automatically filled with pellets. When flame formation has been detected (thermocontrol sensor), the boiler enters flame stabilisation mode and then control mode (modulation mode) and keeps to the specified boiler temperature setpoint (between 60 °C and 75 °C). The boiler enters burnout mode if the heat consumed drops below the minimum nominal thermal output or no heating requirement is signalled by the control system. The blower continues to run until the burner pot has cooled down.

### 2.1.1 BioWIN Klassik

The reserve supply container is loaded by hand. The heating surfaces are cleaned manually using the cleaning lever. The cleaning residues from the heating surfaces and the combustion residues from the burner pot drop into the ash pan.

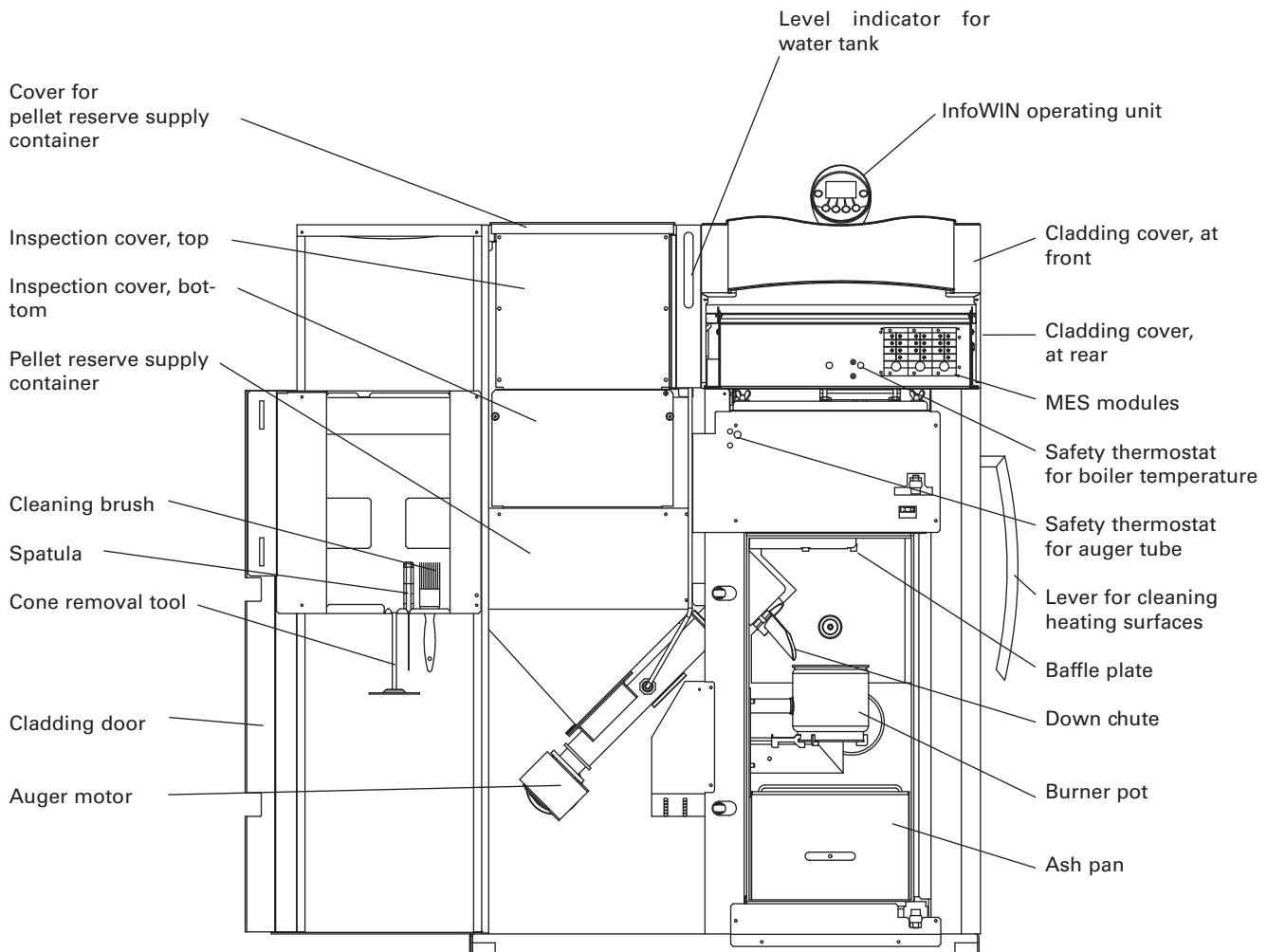


Fig. 4 BioWIN Klassik without combustion chamber door and with open cladding door

# Operation

## 2.1.2 BioWIN Premium

### Version as BioWIN Klassik, but in addition with fully automatic pellet feed

The pellet feed uses a maintenance-free suction turbine to fill the BioWIN reserve supply container fully automatically with pellets from a pellet storage room or storage container. The pellet feed is switched on by the lower fill level switch (proximity switch) in the reserve supply container or at the end of the enable time or the beginning of the start time, and runs for as long as the reserve supply container is full. Filling is not started if the boiler is in heating operation or the feed has been blocked by the control unit (not during the enable time e.g. at night). If the boiler is operating when filling is necessary, the boiler switches to burnout mode.

Switching between suction probes 1, 2 and 3 is fully automatic. The system changes to the next suction probe after the reserve supply container has been filled a certain number of times. This means the storage room is evenly emptied to a large extent.

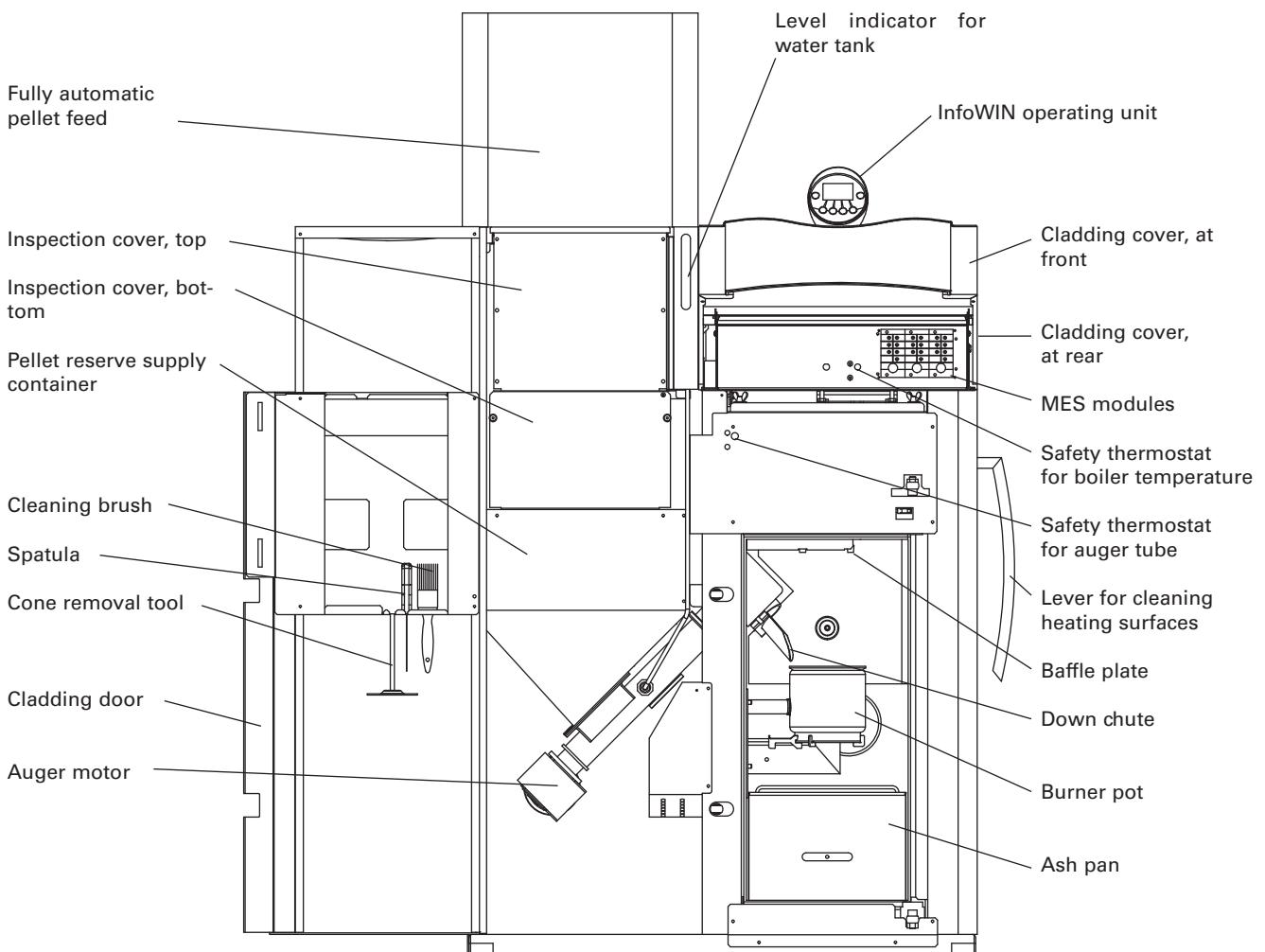


Fig. 5 BioWIN Premium without combustion chamber door and with open cladding door

# Operation

## 2.1.3 BioWIN Exklusiv

**Version as BioWIN Premium, but in addition with fully automatic heating surface cleaning and ash removal**

Fully automatic heating surface cleaning:

A motor moves the heating surface cleaning system vertically and the heating surfaces remain clean.

Fully automatic ash removal:

During fully automatic ash removal, the ash is transported out of the combustion chamber and the heating surfaces in the side ash container under the supply container using a motor and auger. Pellets only have a low ash content (approx. 0.5 %). The container therefore only needs emptying 1–4 times a year.

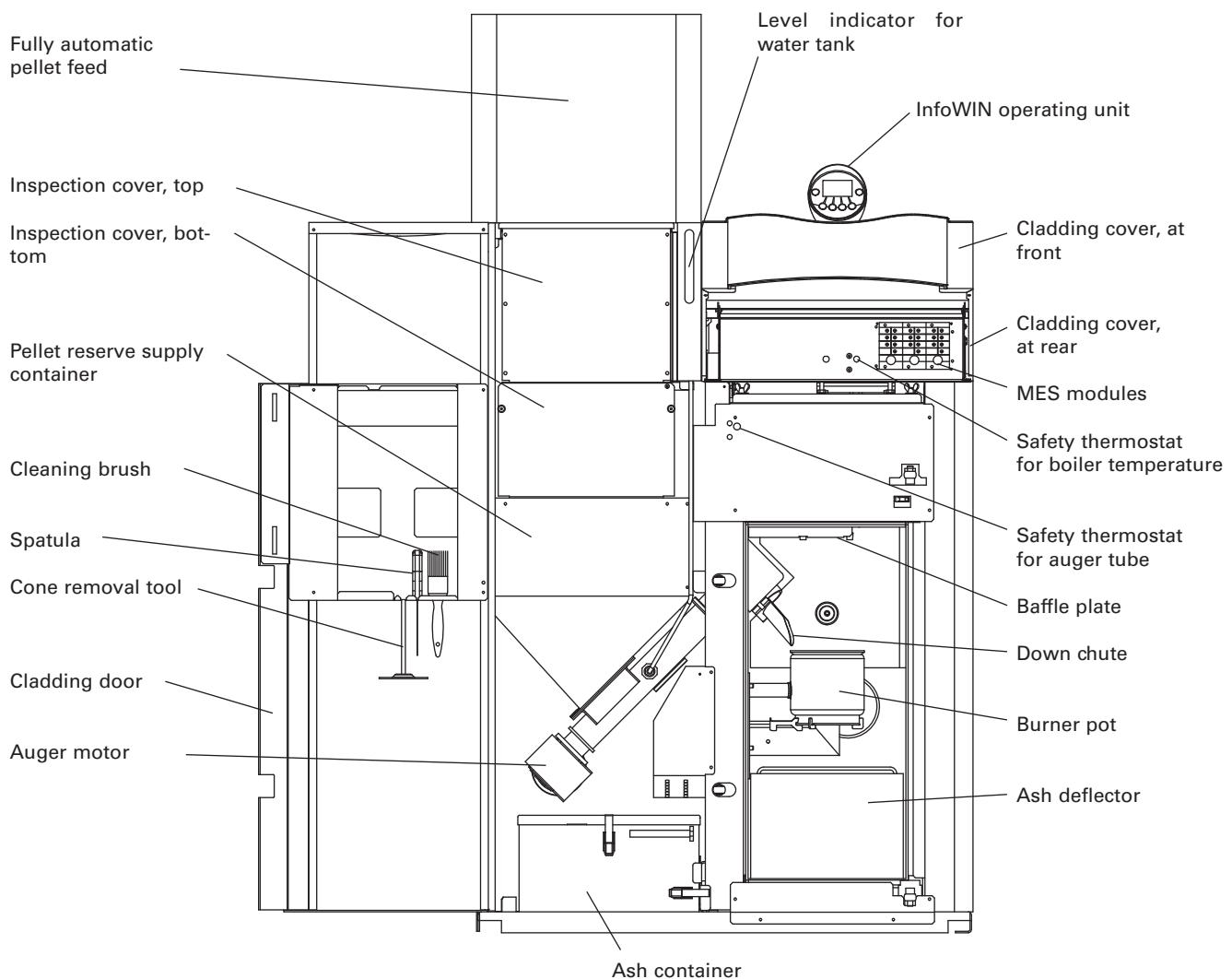


Fig. 6 BioWIN Exklusiv without combustion chamber door and with open cladding door

# Operation

## 2.2 Check before initial start-up

### a) System pressure (heating water pressure):

The system must be filled and vented. With the system cold, pressure should be at least 1.0 bar (maximum 1.8 bar). If you have any questions, your installer will gladly answer them.

### b) Ventilation:

Please make sure the boiler room is well ventilated. The air supply must be as free of dust as possible.

### c) Flue:

Please have the chimney sweep check the flue, and, if necessary, clean it.

### d) Water tank:

For level check in water tank for burn-back safeguard – see page 43.

## 2.3 Filling the reserve supply container

### 2.3.1 BioWIN Klassik – Manual filling

Open reserve supply container cover and fill reserve container up to max. 1 cm below the edge.  
Close the cover.

### 2.3.2 BioWIN Premium and Exklusiv – fully automatic filling

The reserve supply container is filled by the fully automatic pellet feed. WINDHAGER Customer Service or the customer service PARTNER will perform the first fill (start-up), take the boiler and its pellet supply into service and familiarise the customer with the operation and cleaning of the boiler, with reference to the Operating Manual.

# Operation

## 2.4 InfoWIN

The InfoWIN is an indication and operation unit on the boiler.

It consists of a large full text display, an ON/OFF button with an LED signal lamp indicating Operation (green) or Malfunction (red), a button for manual operation / chimney sweeper function as well as four individual menu buttons. The function of each menu button is displayed on the Menu line.

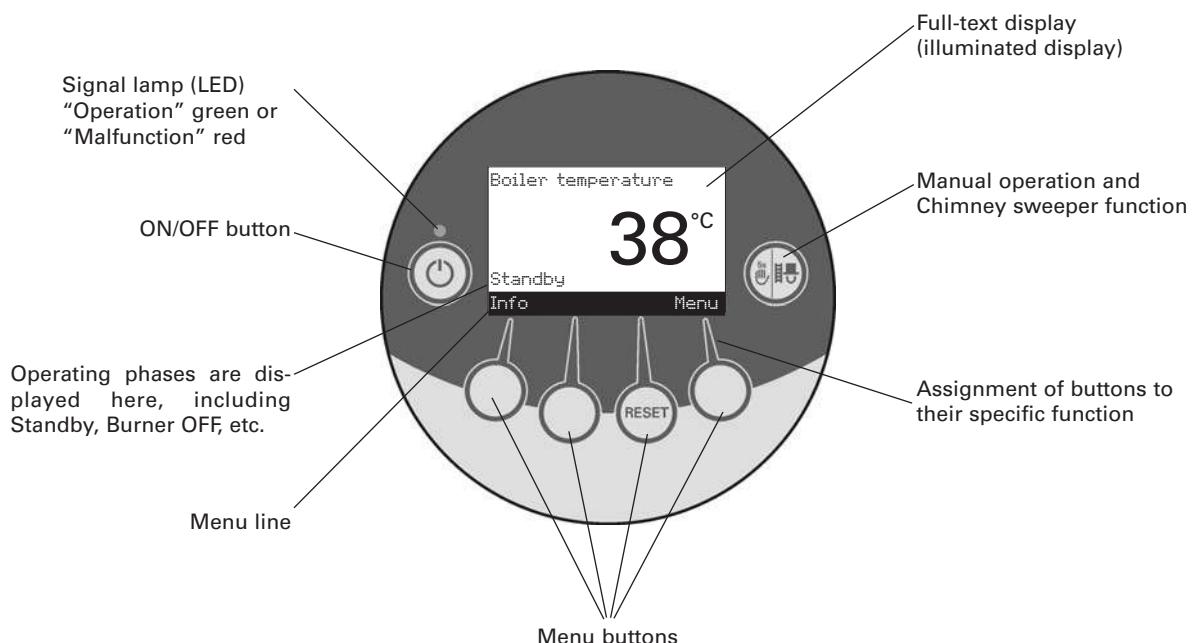


Fig. 7 InfoWIN

The various operating modes are displayed on InfoWIN together with the corresponding operating phases.

The following **operating modes** exist:

- OFF
- ON (with self-test, lighting ON, lighting OFF)
- Pellet feed
- Solid fuel / buffer mode
- Manual operation
- Chimney sweeper function
- Shut-down procedure

The individual operating modes also have different **operating phases**

The following **operating phases** exist:

- Standby, display OFF
- Purging
- Ignition phase
- Flame stabilisation
- Modulation mode
- Burnout
- Burner OFF
- Switch off heat generator

# Operation

## 2.5 Operating modes

### 2.5.1 OFF mode

The boiler is switched off when in OFF mode. The display and all buttons, with the exception of the *ON/OFF* button, do not function. The LED on the InfoWIN does not light up – Fig. 8.

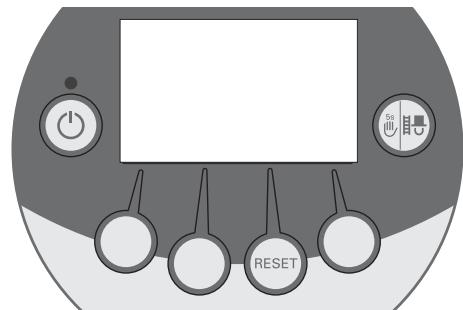


Fig. 8 OFF mode

### 2.5.2 ON mode, lighting ON, self-test, lighting OFF

Press the *ON/OFF* button, lighting and display are switched on and the self-test starts automatically – Fig. 9.

#### Self-test:

Sensors, switches and motors are checked during the self-test.

After a successful self-test, the display shows an operating phase and the boiler water temperature (standard display). The LED control lamp lights up green and the desired functions can be selected using the buttons – Fig. 10.

If the self-test was unsuccessful, an information message (e.g. information, fault, alarm) is displayed (see sections 4.3 and 4.4).



Fig. 9 Self-test

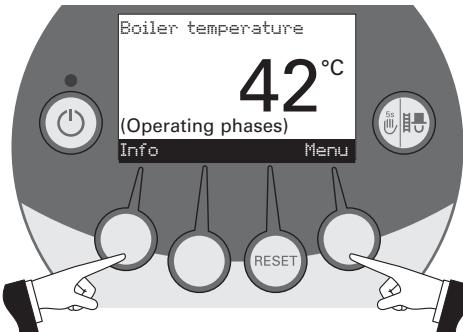


Fig. 10 Standard display

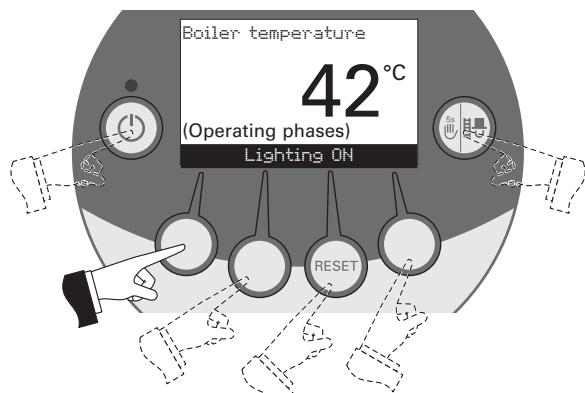


Fig. 11 Display lighting ON

InfoWIN identifies and stores the various operating modes and states. Once the system is switched on, other operating modes may also be displayed instead of the standard display, such as manual operation, solid fuel or accumulator tank operation; malfunctions are also displayed. These operating modes and states are described later in these instructions.

# Operation

## 2.5.3 Pellet feed

### Pellet feed – burnout

Pellet feed from the storage room into the reserve supply container has been requested. Combustion is stopped. Pellet transport into the burner pot is stopped, the Induced draught fan continues to run until all the remaining pellets have been burned and the burner pot has cooled down – Fig. 12.

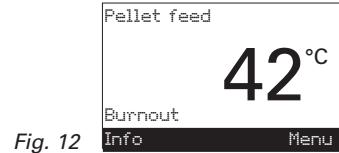


Fig. 12

### Pellet feed in operation

The pellet feed is in operation. Pellets are supplied from the storage room into the reserve supply container. The burner is locked – Fig. 13.

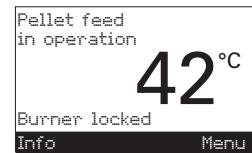


Fig. 13

## 2.5.4 Solid fuel / buffer mode

If the BioWIN pellet boiler is combined with a solid fuel boiler or an accumulator tank, the WVF or BUL module integrated in the control panel automatically switches over between pellet and solid fuel/buffer mode.

Combustion of the BioWIN is stopped when the WVF or BUL module sends the request to switch over to solid fuel/buffer mode – Fig. 14.

Following this, the system switches over to solid fuel/buffer mode and the BioWIN burner is locked – Fig. 15.

If the pellet boiler is switched off using the ON/OFF button on the InfoWIN, an automatic switchover to solid fuel/buffer mode is performed in conjunction with a WVF module. Once the InfoWIN unit is switched on, the pellet boiler can be locked out for a maximum of 15 minutes due to switch-over delays. This is displayed by InfoWIN – Fig. 15.

After an hour in solid fuel/buffer mode, the display is shut down fully, only the green LED is lit up. The display is switched back on by pressing a button or when there is a heating requirement.

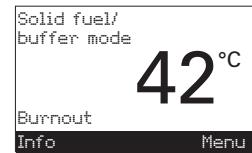


Fig. 14

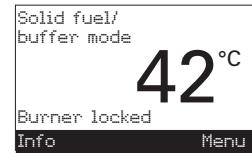


Fig. 15

# Operation

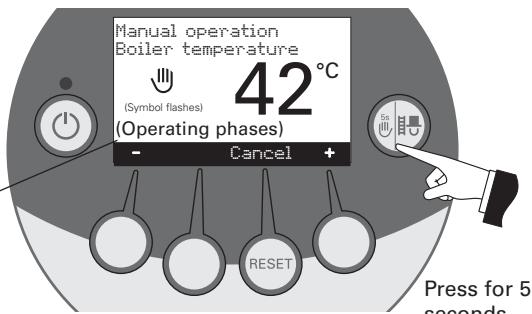
## 2.5.5 Manual operation

**Note:** Manual operation cannot be started in "solid fuel/buffer mode". Manual operation must not be started if an installed solid fuel boiler is operating (heated up). Manual operation may be started if there is no solid fuel boiler installed or if this is not operating but only the accumulator tank is active. In this case, first set the operating mode switch on the WVF module to relay test 2 or on the BUL module to relay test 1 (see WVF or BUL module operating manual).

Pressing one of the six buttons switches the lighting and display on. Manual operation starts if the *Manual operation / chimney sweeper function* button is pressed for more than five seconds – Fig. 16. This sets the boiler temperature to the setpoint fixed for manual operation (standard value 60 °C). The current automatic setting is not affected by this. The lighting is switched off after the lighting timer has counted down (10 min.); the function or display remains unchanged.

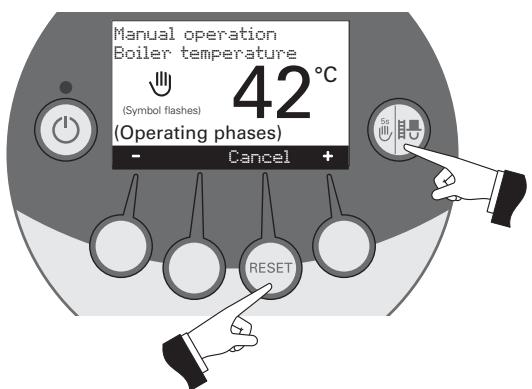
The various operating phases are displayed here, including Burner in operation, Burner OFF, etc.

Fig. 16



Pressing the *Cancel* button or *Manual operation / chimney sweeper function* button terminates the function – Fig. 22. The boiler returns to automatic operation.

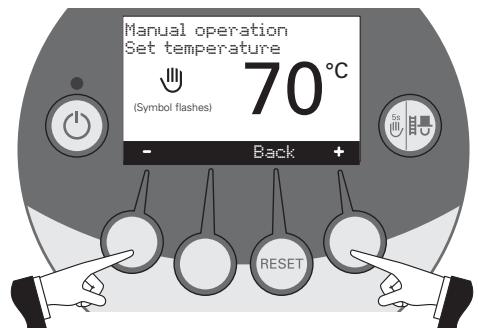
Fig. 17



### Setpoint adjustment for manual operation

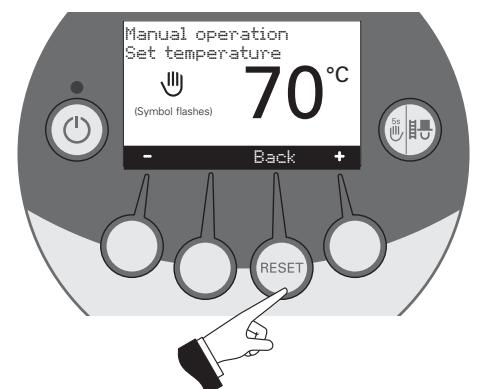
By pressing the + or – button the display switches to the setpoint adjustment mode – Fig. 18. Using the + or – button can change the setpoint in 1 K steps. The temperature set in this mode is not permanently saved. The original set temperature is used once manual operation ends.

Fig. 18



After pushing the *Return* button (Fig. 19) or after waiting 45 seconds, the screen returns to its previous display.

Fig. 19



# Operation

## 2.5.6 Chimney sweeper function

This function aids the performance of legally-required emissions testing.

**Note:** The chimney sweeper function cannot be started in "solid fuel/buffer mode". The chimney sweeper function must not be started if an installed solid fuel boiler is operating (heated up). The chimney sweeper function may be started if there is no solid fuel boiler installed or if this is not operating but only the accumulator tank is active. In this case, first set the operating mode switch on the WVF module to relay test 2 or on the BUL module to relay test 1 (see WVF or BUL module operating manual).

A short press of the *Manual operation / chimney sweeper function* button switches on the lighting and display. Pressing the button again starts the chimney sweeper function – Fig. 20. The boiler temperature is set to approx. 60 °C for 45 min.

The various operating phases are displayed here, including Burner in operation, Burner OFF, etc.

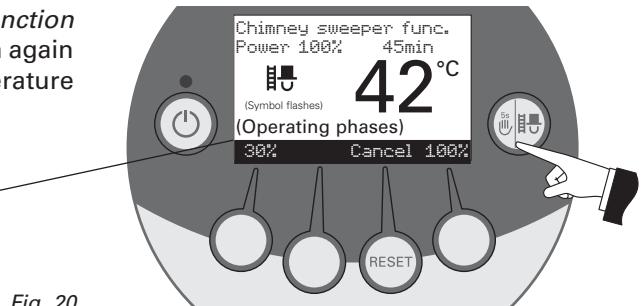


Fig. 20

Pressing the corresponding menu button enables the boiler to be operated with 30 % or 100 % output – Fig. 21. The lighting is switched off after the lighting timer has counted down (10 min.); the function or display remains unchanged.. Only the lighting is switched on when the button is first pressed.

The operating time is reset to 45 min. when the *Manual operation / chimney sweeper function* button is pressed again.

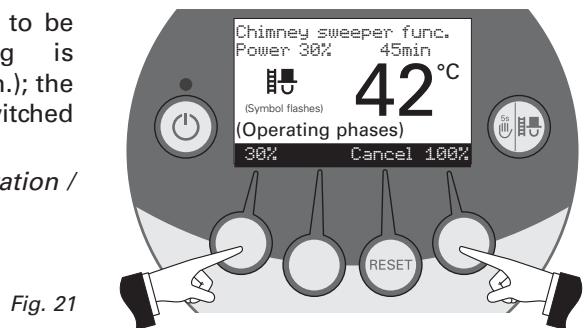


Fig. 21

The chimney sweeper function ends

- when the *Cancel* button is pressed – Fig. 22.
- automatically after about 45 minutes.

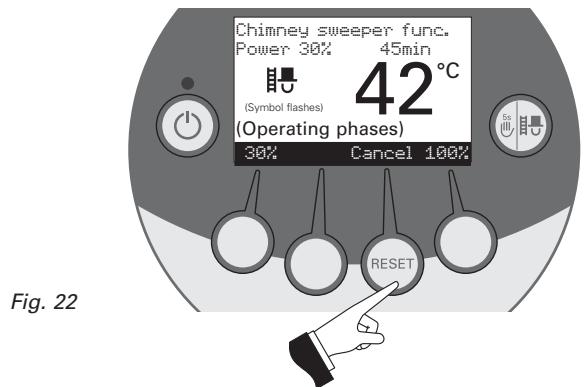


Fig. 22

## 2.5.7 Shut-down procedure

The boiler is switched off - Fig 23.

The green LED flashes

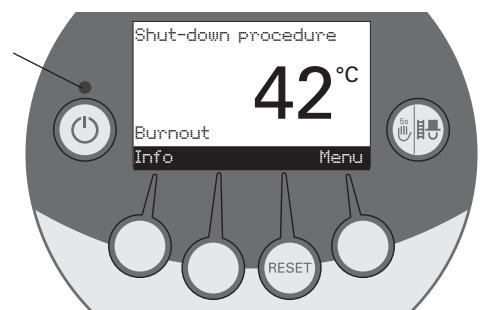


Fig. 23

# Operation

## 2.6 Operating phases

### 2.6.1 Standby

During this operating phase, the controls do not transmit requests for heat. The burner is switched off and the boiler temperature setpoint is 0 °C – Fig. 24.

After an hour in standby mode, the display is shut down fully, only the green LED is lit up. The display is switched back on by pressing a button or when there is a heating requirement.

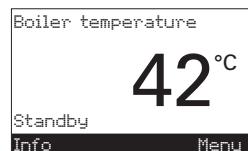


Fig. 24

### 2.6.2 Purging

The Induced draught fan runs, the combustion chamber of the BioWIN is flushed through with fresh air. This phase can last several minutes before the burner fires – Fig. 25.



Fig. 25

### 2.6.3 Ignition phase

The Induced draught fan runs, pellets are transported into the burner pot and are ignited. When flame formation is detected, the system switches over to flame stabilisation – Fig. 26.

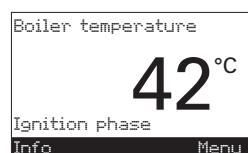


Fig. 26

### 2.6.4 Flame stabilisation

Following the ignition procedure, even combustion is established and then the system switches over to modulation mode – Fig. 27.

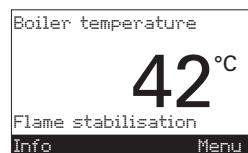


Fig. 27

### 2.6.5 Modulation mode

The burner is in modulation mode. The output is infinitely varied between 30 % and 100 % – Fig. 28.

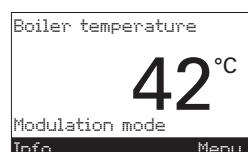


Fig. 28

### 2.6.6 Burnout

Combustion is stopped. Pellet transport into the burner pot is stopped, the Induced draught fan continues to run until all the remaining pellets have been burned and the burner pot has cooled down – Fig. 29.

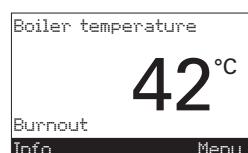


Fig. 29

### 2.6.7 Burner OFF

There is a heating requirement from the control system, but the boiler temperature (actual value) is higher than the boiler temperature setpoint. This means combustion is stopped and the burner is switched off – Fig. 30.

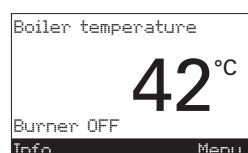


Fig. 30

# Operation

## 2.7 Information text

Pressing the *Info* button calls up the most important BioWIN information – Fig. 31.

The *arrow* buttons select and display sub-menus – Fig. 32. Pressing the *Back* button (Fig. 33) or waiting 45 seconds returns to the standard display.

The following **information texts** exist:

- Next boiler cleaning in about [h]
- Operating hours [h]
- Total pellet consumption [t]
- Flue gas temperature [°C]
- Boiler temperature setpoint [°C]
- Current boiler output [%]
- Switch/buffer temperature
- Display module software version
- Firing automate software version
- Boiler model

Fig. 31

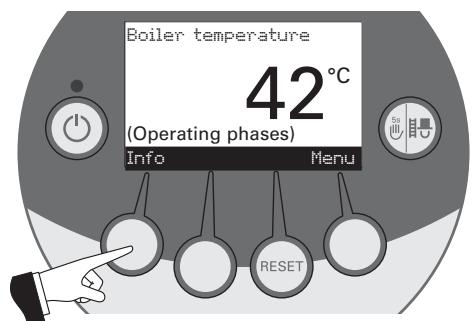


Fig. 32

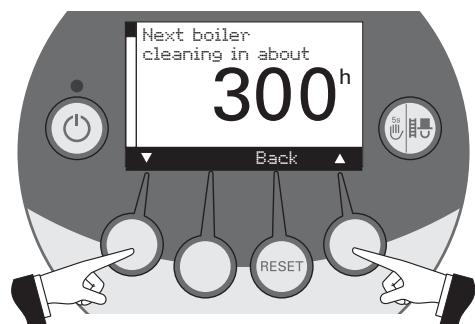


Fig. 33



### 2.7.1 Next boiler cleaning

Display of the operating time in hours remaining until the next boiler cleaning – Fig. 34.

**Note:** The operating time remaining until the next boiler cleaning depends on the operating method and is constantly recalculated. Therefore, there may be deviations from the normal operating hours.

### 2.7.2 Operating hours

The total number of burner operating hours is displayed – Fig. 35.

Fig. 34



Fig. 35



### 2.7.3 Total pellet consumption

The total amount of pellets consumed is displayed in tonnes - Fig. 36.

**Note:** The “Total pellet consumption” is a calculated value and can differ from the actual value by ±15%.

Fig. 36



# Operation

## 2.7.4 Flue gas temperature

This function displays the current flue gas temperature – Fig. 37.



The flue gas temperature is measured directly on the flue outlet. It may therefore deviate from a standard measurement.



Fig. 37

## 2.7.5 Boiler temperature setpoint

The display indicates the boiler temperature setpoint as calculated by the control system. This setpoint is used to control the burner – Fig. 38.



Fig. 38

## 2.7.6 Current boiler output

The current boiler output is displayed in %. The boiler output (modulation mode) can be set from 30 % to 100 % – Fig. 39.

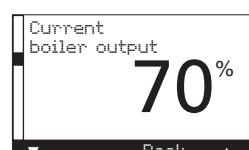


Fig. 39

## 2.7.7 Switch/buffer temperature

The switch/buffer temperature is not displayed for an individual BioWIN boiler. The current switch/buffer temperature is only displayed for a BioWIN cascade (system with 2 or 3 BioWINs) – Fig. 40.

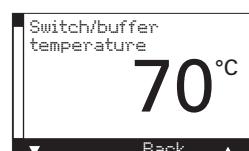


Fig. 40

## 2.7.8 Display module software version

The current software version of the display module (InfoWIN) is displayed – Fig. 41.



Fig. 41

## 2.7.9 Firing automate software version

The current software version of the firing automate (main PCB) is displayed – Fig. 42.



Fig. 42

## 2.7.10 Boiler model

With an individual BioWIN boiler, the boiler model is always displayed and 0 is always displayed as the boiler – Fig. 43.

With a BioWIN cascade (system with 2 or 3 BioWINs), the boiler model and boiler name of the pellet boiler are displayed – Fig. 43.

Boiler 0 = 1st boiler

Boiler 1 = 2nd boiler

Boiler 2 = 3rd boiler

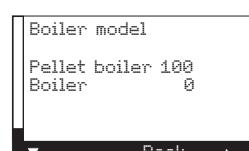


Fig. 43

# Operation

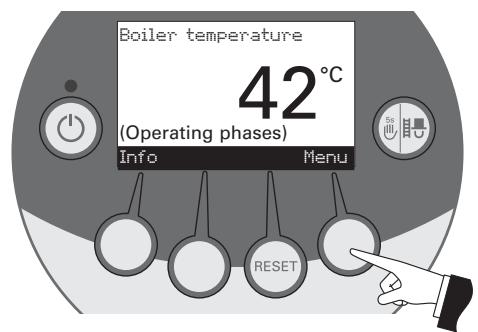
## 2.8 Menu guide

Pressing the *Menu* button changes the menu display to the Operator level or the Service level – Fig. 44.

Use the *arrow* buttons to select the Operator level or Service level (Fig. 45) and confirm with the *Choose* button – Fig. 46.

The menu item or sub-menu item is exited by pressing the *Back* button (Fig. 47) or after a delay of 45 seconds.

Fig. 44



Only trained service personnel may perform system modifications on the Service level.

Fig. 45

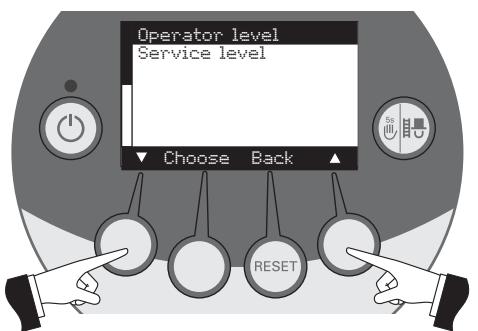


Fig. 46

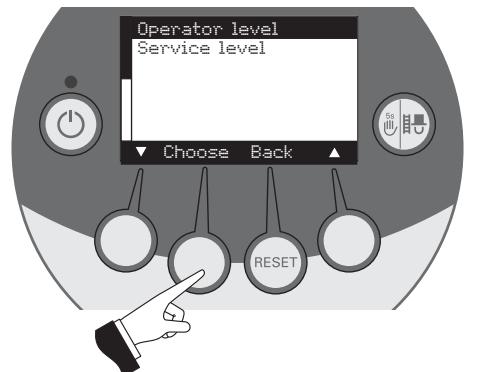
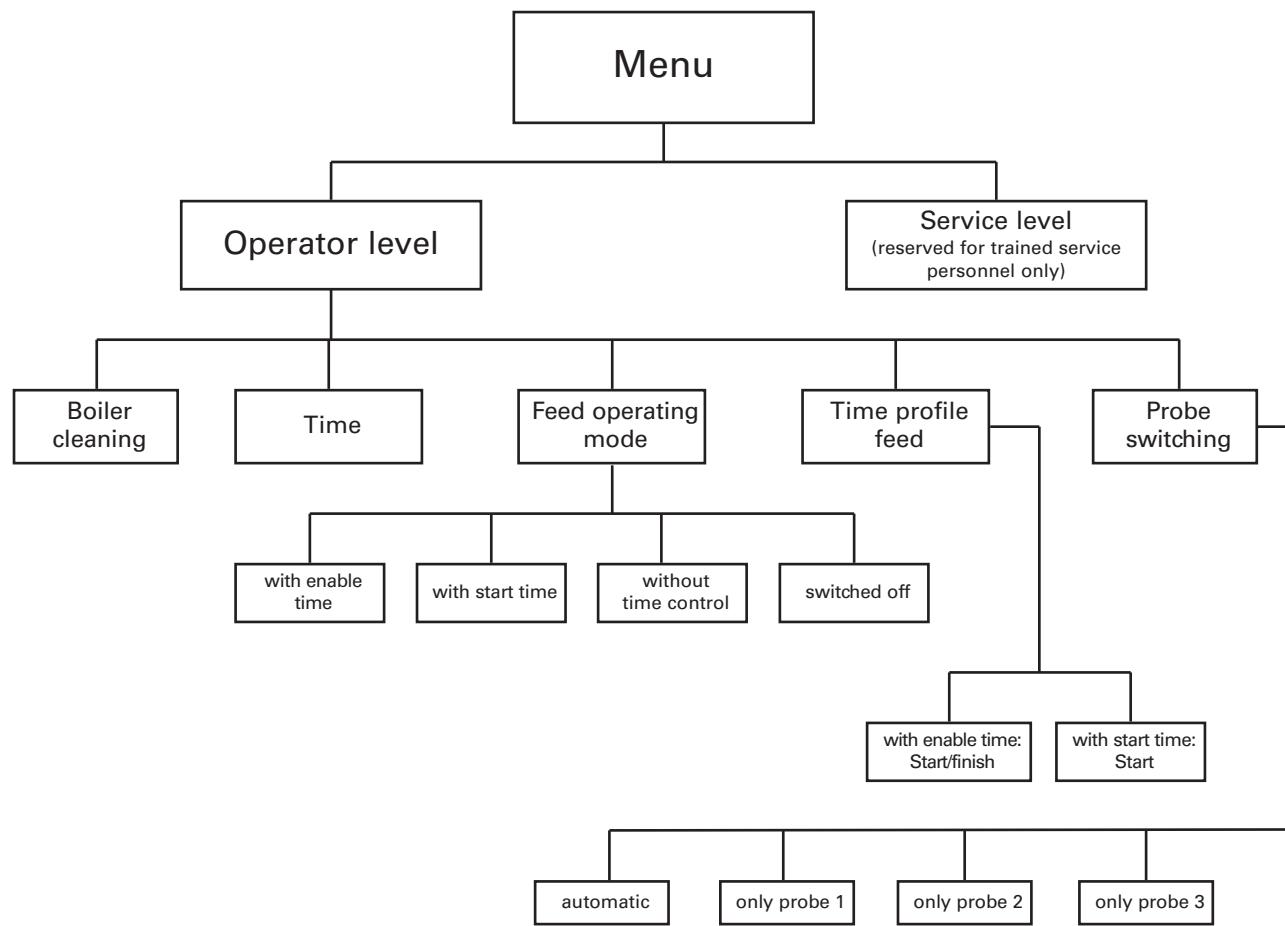


Fig. 47



# Operation

## Menu structure:



# Operation

## 2.8.1 Operator level

Pressing the *Menu* button changes to the “Operator level” and “Service level” – Fig. 48.

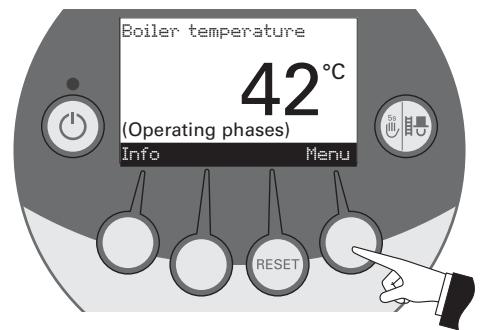


Fig. 48

The *Arrow* buttons select the “Operator level”; the *Choose* button confirms the choice – Fig. 49.

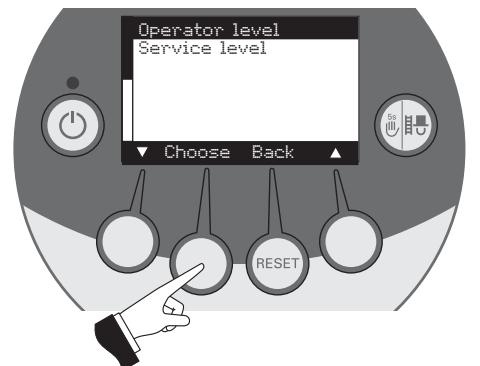
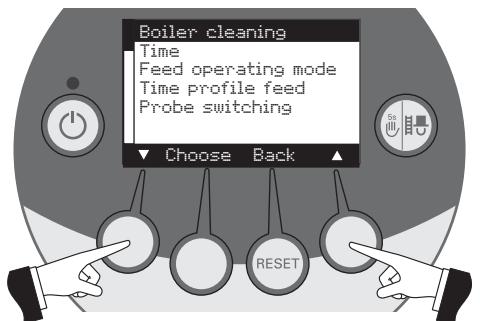


Fig. 49

On the Operator level, use the *Arrow* buttons to select the required sub-menu (Fig. 50); the *Choose* button confirms the choice.

Adjusting the:  
boiler cleaning: see section 2.8.1.1  
time: see section 2.8.1.2.  
feed operating mode: see section 2.8.1.3.  
time profile feed: see section 2.8.1.4.  
probe switching: see section 2.8.1.5.

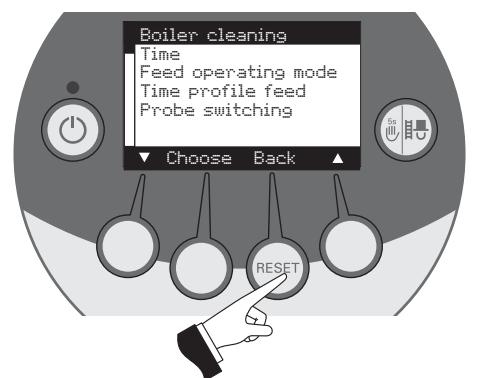
Fig. 50



**Note:** The menu items “Feed operating mode”, “Time profile feed” and “probe switching” are only shown if a feed or probe switching function is provided and activated on the service level.

The menu item or sub-menu item is exited by pressing the *Back* button (Fig. 51) or after a delay of 45 seconds.

Fig. 51



# Operation

## 2.8.1.1 Boiler cleaning – Resetting the cleaning request

After boiler cleaning has been performed (section 3.1), boiler cleaning must be confirmed so that the operating time until the next boiler cleaning is restarted.



**Without cleaning** boiler cleaning must **not** be reset.

Pressing one of the six buttons switches the lighting and display on – Fig. 52.

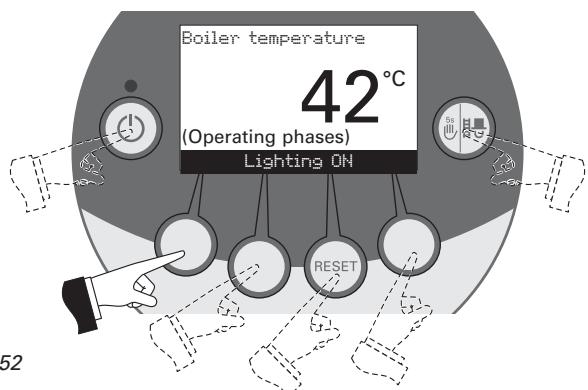


Fig. 52

Press the *Menu* button – Fig. 53.

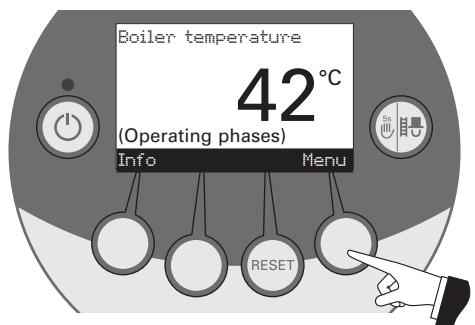


Fig. 53

Confirm the selected menu item "Operator level" by pressing the *Choose* button – Fig. 54.

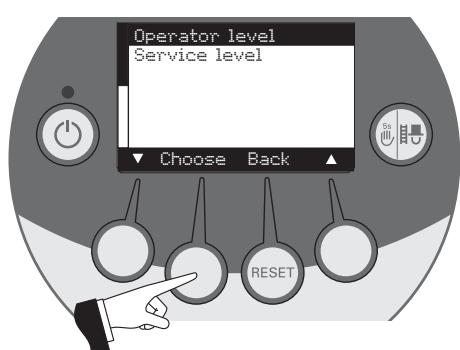


Fig. 54

The *arrow* buttons select the "Boiler cleaning" sub-menu – Fig. 55.

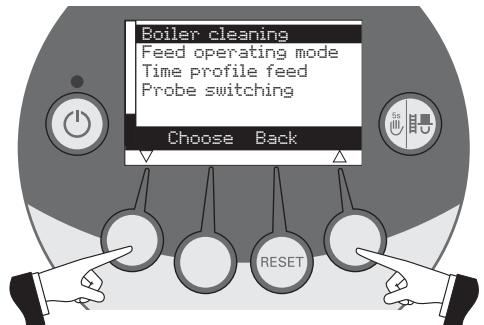


Fig. 55

Confirm the selected "Boiler cleaning" sub-menu by pressing the *Choose* button – Fig. 56.

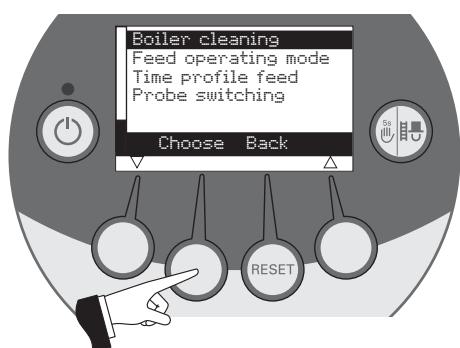


Fig. 56

# Operation

Pressing the *Yes* button resets the boiler cleaning – Fig. 57. The display shows “Saving parameter value” for a few seconds (Fig. 58) and then changes back to the previous level – Fig. 59.

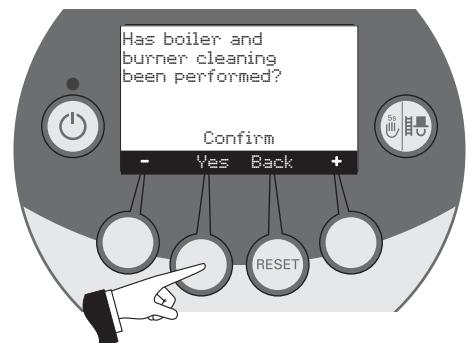


Fig. 57

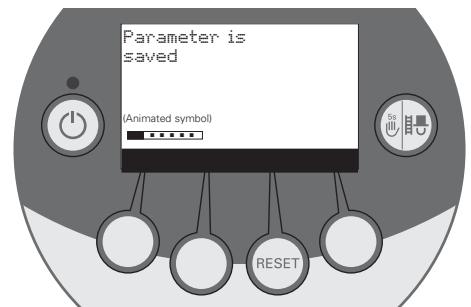


Fig. 58

The menu item or sub-menu item is exited by pressing the *Back* button (Fig. 59) or after a delay of 45 seconds.

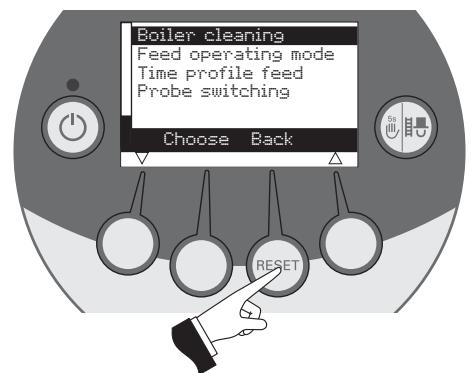


Fig. 59

# Operation

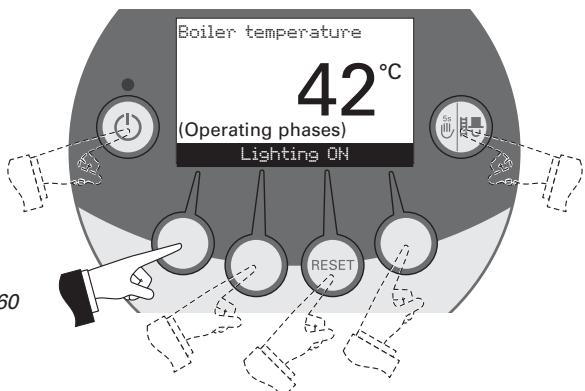
## 2.8.1.2 Setting the time

This time is used for the time control of the pellet feed and for automatic heating surface cleaning.

If the BioWIN is operated with an MES control, the time is automatically adopted from the module and the time set here is overwritten.

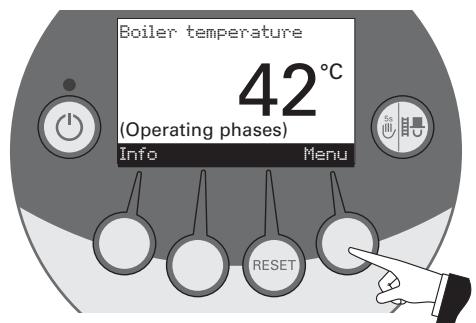
If the BioWIN is operated with REG standard control, the time must be set here too.

Fig. 60



Press the *Menu* button – Fig. 61.

Fig. 61



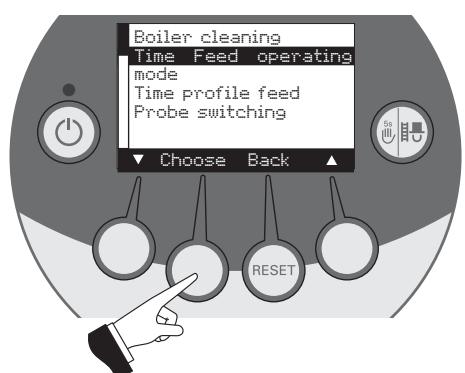
Confirm the selected menu item "Operator level" by pressing the *Choose* button – Fig. 62.

Fig. 62



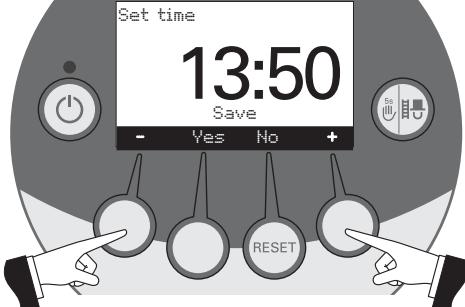
Confirm the selected "Time" sub-menu by pressing the *Choose* button – Fig. 63.

Fig. 63



The *arrow* buttons set the required time – Fig. 64.

Fig. 64



# Operation

Pressing the **Yes** button saves the changed time – Fig. 65. The display shows “Saving parameter value” for a few seconds (Fig. 66) and then changes back to the previous level – Fig. 67.



Fig. 65

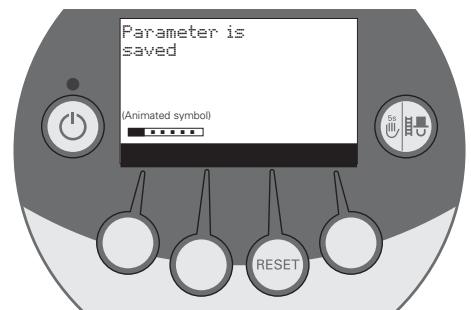


Fig. 66

The menu item or sub-menu item is exited by pressing the **Back** button (Fig. 67) or after a delay of 45 seconds.

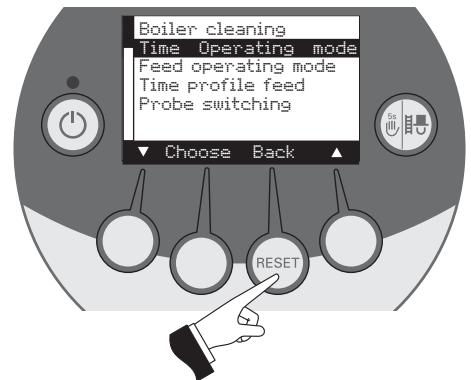


Fig. 67

# Operation

## 2.8.1.3 Setting the feed operating mode

This menu item sets:

- whether the feed is switched off, or
- whether the feed should fill the pellet boiler with or without time control.

Pressing one of the six buttons switches the lighting and display on – Fig. 68.

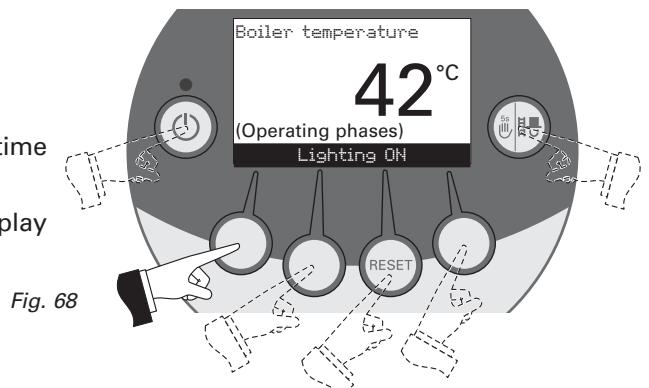


Fig. 68

Press the *Menu* button – Fig. 69.

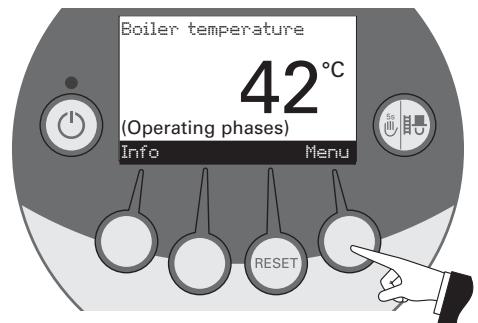


Fig. 69

Confirm the selected menu item "Operator level" by pressing the *Choose* button – Fig. 70.

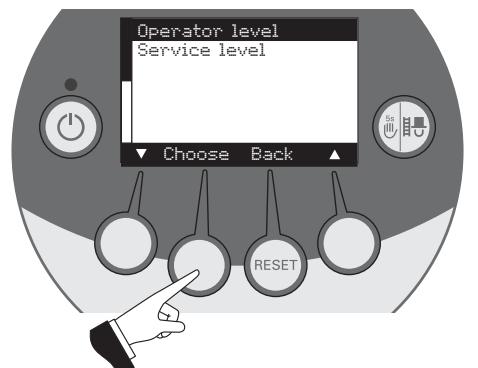


Fig. 70

The arrow buttons select the "Feed operating mode" sub-menu – Fig. 71.

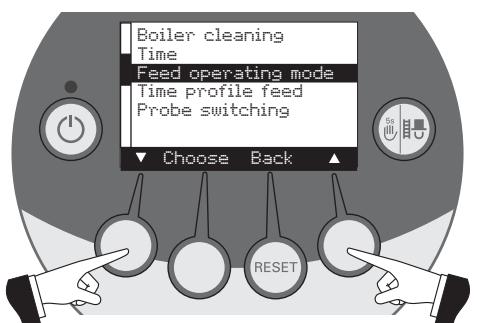


Fig. 71

Confirm the selected sub-menu "Feed operating mode" by pressing the *Choose* button – Fig. 72.

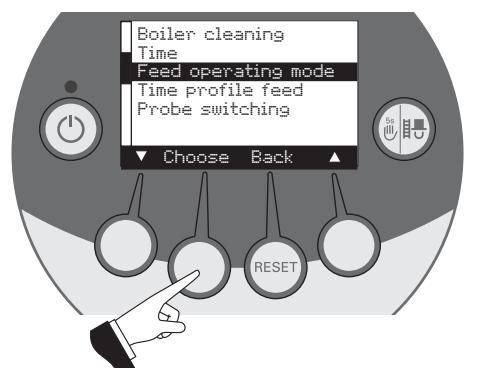


Fig. 72

# Operation

The **factory setting** for the “Feed operating mode” menu item is “switched off”.

**without time control:** Select this if the feed noise (suction turbine) cannot be heard or is not disruptive in the living area. This mode guarantees the fewest possible feeds because the reserve supply container is always “run to empty”.

Functional description: The pellet feed is automatically switched on at any time as soon as the reserve supply container is empty.

**with start time:** Select this if you want the feed to start at the same time every day.

Functional description: The reserve supply container is filled every day at the set time (see page 28). Interim fills are also performed if the filling amount is not sufficient for 24 hours.

**with enable time:** Select this if the feed noise (suction turbine) can be heard or is disruptive in the living area.

Functional description: The pellet feed is enabled during a time period that can be set (see page 29). The reserve supply container is automatically refilled full at the end of the enable time.

Tip: A complete fill sucks in about 25 kg of pellets. The pellets required during the blocked time must not exceed this value!

Burning duration with 50 kg pellets	
BioWIN	Burning duration at nominal output
BW 100	19 h
BW 150	14 h
BW 210	10 h
BW 260	8 h

**i** It is only ever possible to select one menu item at a time. The “time profile feed” corresponding to this selected menu item can then be set in section 2.8.1.3

The *arrow* buttons select the required sub-menu – Fig. 73.

Pressing the *Yes* button saves the changed “Feed operating mode” – Fig. 74. The display shows “Saving parameter value” for a few seconds (Fig. 75) and then changes back to the previous level – Fig. 76.

The menu item or sub-menu item is exited by pressing the *Back* button (Fig. 76) or after a delay of 45 seconds.

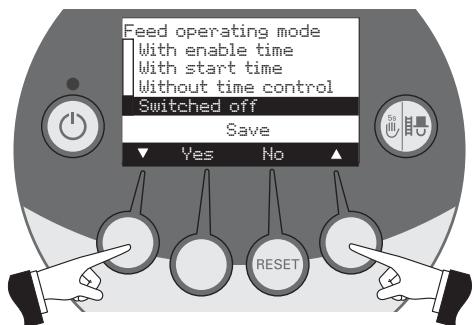


Fig. 73

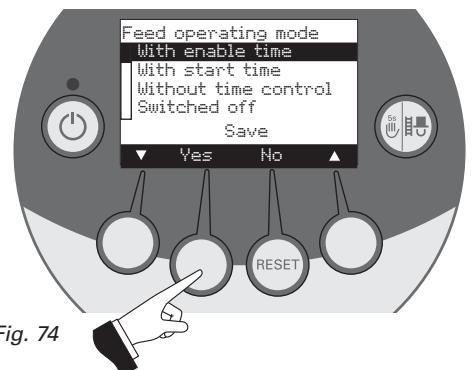


Fig. 74

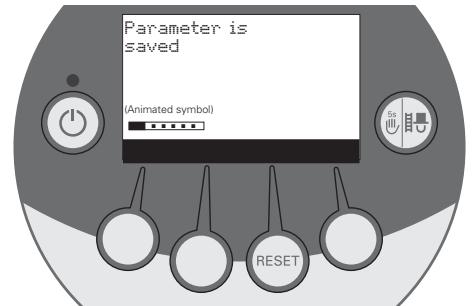


Fig. 75

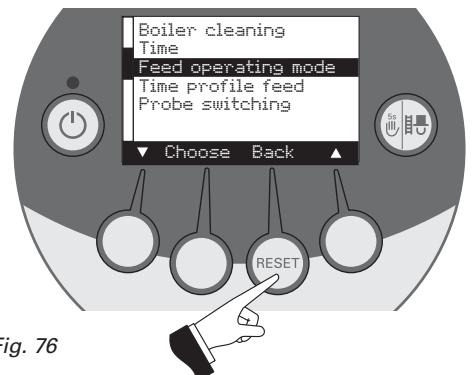


Fig. 76

# Operation

## 2.8.1.4 Setting the time profile feed

The “Time profile feed” menu item displays the corresponding setting option depending on the setting in the “Feed operating mode” menu item (see section 2.8.1.3).

Setting: “With enable time” see page 29

Setting: “With start time” see page 28

Setting: “Without time control” or “switched off” see page 30

Pressing one of the six buttons switches the lighting and display on – Fig. 77.

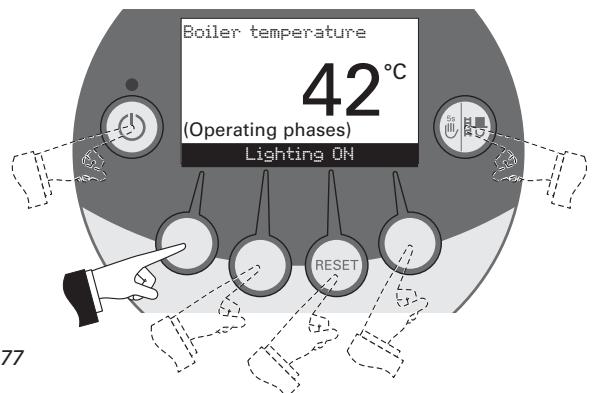


Fig. 77

Press the *Menu* button – Fig. 78.

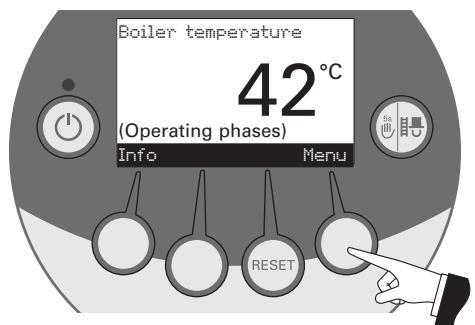


Fig. 78

Confirm the selected menu item “Operator level” by pressing the *Choose* button – Fig. 79.

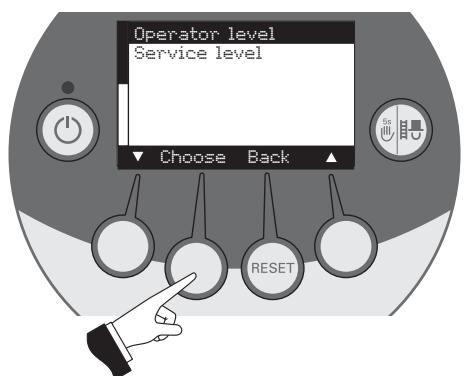


Fig. 79

The arrow buttons select the “Time profile feed” sub-menu – Fig. 80.

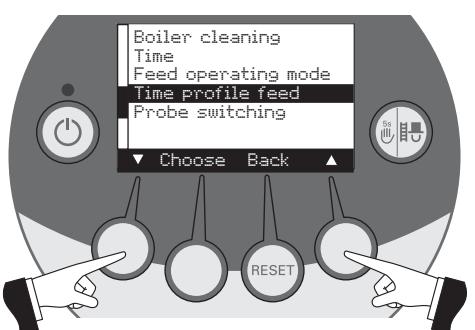


Fig. 80

Confirm the selected sub-menu “Time profile feed” by pressing the *Choose* button – Fig. 81.

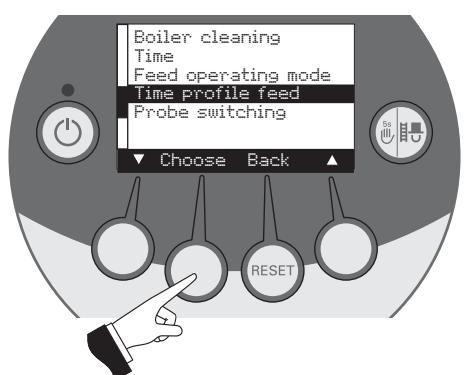


Fig. 81

# Operation

## "with start time"

A time can be set here in the "Time profile feed" menu item for filling the reserve supply container if the "with start time" setting is active in the "Feed operating mode" menu item (see section 2.8.1.3). The reserve supply container is filled every day at the set time. Interim fills are also performed if the filling amount is not sufficient for 24 hours.

Factory setting "feed start time": Start 20:00

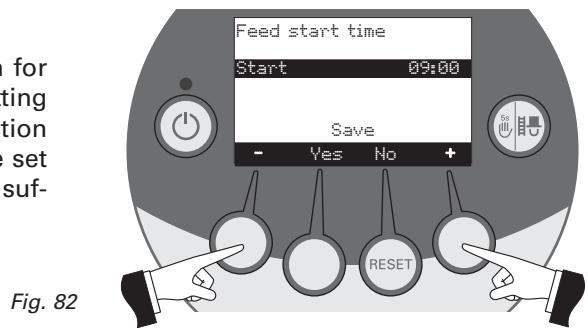


Fig. 82

Pressing the + or - buttons changes the time in 1 min steps – Fig. 82.

Pressing the Yes button saves the changed time – Fig. 83. The display shows "Saving parameter value" for a few seconds (Fig. 84) and then changes back to the previous level – Fig. 85.

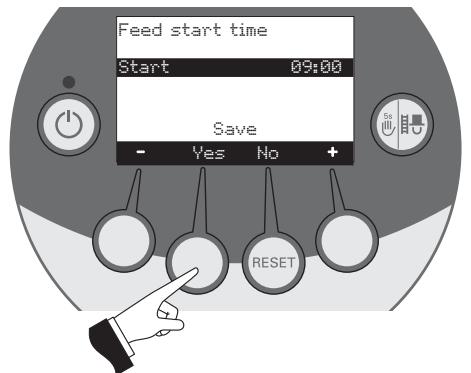


Fig. 83



Fig. 84

The menu item or sub-menu item is exited by pressing the *Back* button (Fig. 85) or after a delay of 45 seconds.

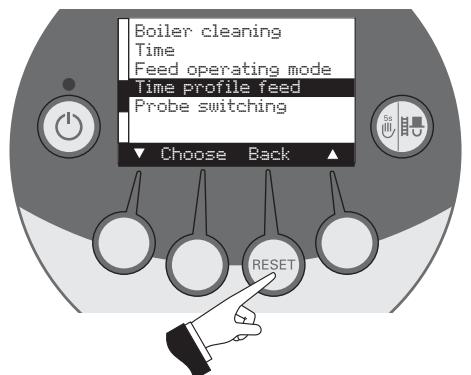


Fig. 85

# Operation

## "with enable time"

The start and end of the enable time can be set here in the "Time profile feed" menu item if the "with enable time" setting is active in the "Feed operating mode" menu item (see section 2.8.1.3).

Factory setting "feed enable time":

Start 07:00

End 22:00

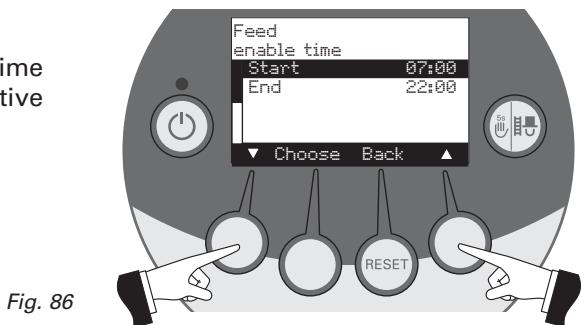


Fig. 86

The arrow buttons select the "Start" or "End" times to be changed – Fig. 86.

Confirm the selected time by pressing the *Choose* button – Fig. 87.

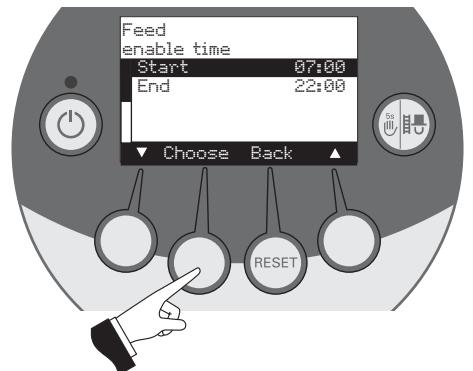


Fig. 87

Pressing the + or - buttons changes the time in 15 min steps – Fig. 88.

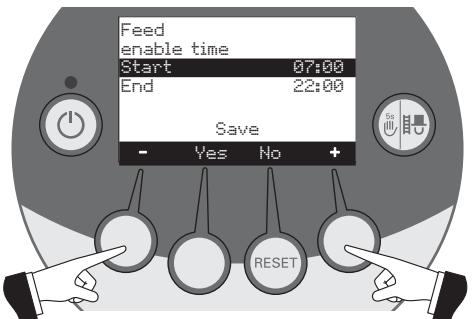


Fig. 88

Pressing the Yes button saves the changed time – Fig. 83. The display shows "Saving parameter value" for a few seconds (Fig. 90) and then changes back to the previous level – Fig. 91.

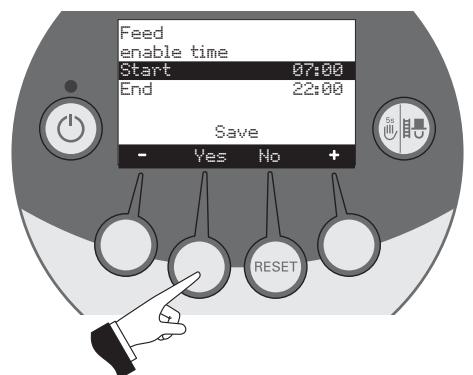


Fig. 89

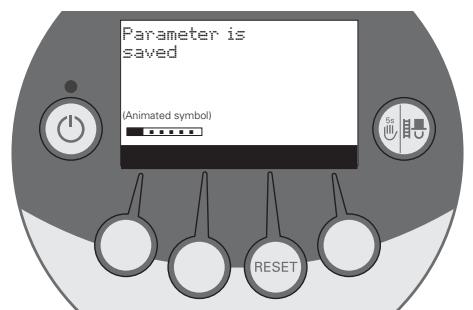


Fig. 90

# Operation

The menu item or sub-menu item is exited by pressing the *Back* button (Fig. 91) or after a delay of 45 seconds.

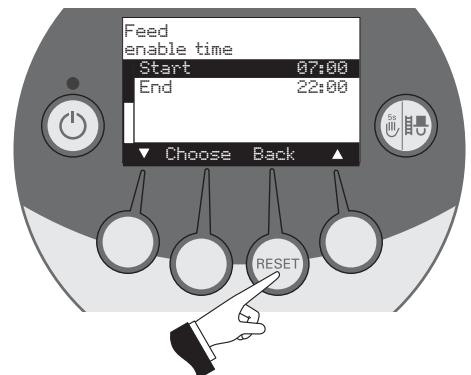


Fig. 91

## "without time control" or "switched off"

No setting is possible here in the "Time profile feed" menu item if the "without time control" or "switched off" setting is active in the "Feed operating mode" menu item (see section 2.8.1.3) – Fig. 92.

The menu item or sub-menu item is exited by pressing the *Back* button (Fig. 92) or after a delay of 45 seconds.

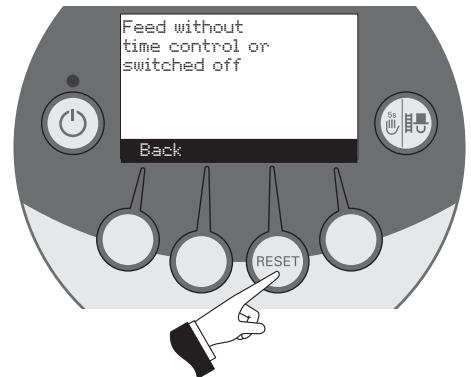


Fig. 92

# Operation

## 2.8.1.5 Setting probe switching

If BioWIN is equipped with a fully automatic pellet feed, it is possible to set here which probe is used for sucking pellets from the pellet storage room. There are four different setting options:

- automatic: removal from all 3 probes, automated switching.
- only probe 1: removal from only probe 1, no switching
- only probe 2: removal from only probe 2, no switching
- only probe 3: removal from only probe 3, no switching

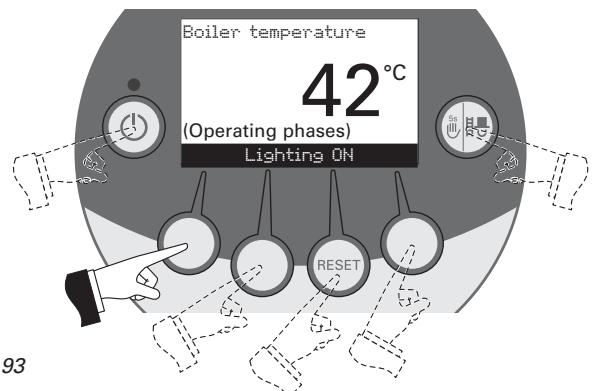


Fig. 93

Note: If "Pellet feed system, operation with 2 probes" is set in the service level, the option of "Removal from only probe 3" is not displayed here.

Pressing one of the six buttons switches the lighting and display on – Fig. 93.

Press the *Menu* button – Fig. 94.

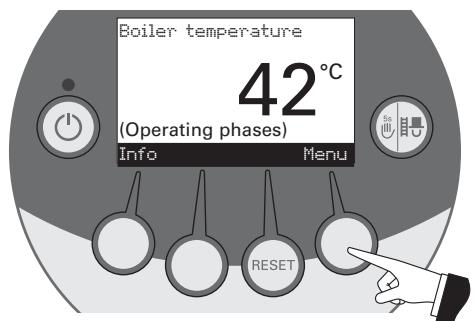


Fig. 94

Confirm the selected menu item "Operator level" by pressing the *Choose* button – Fig. 95.

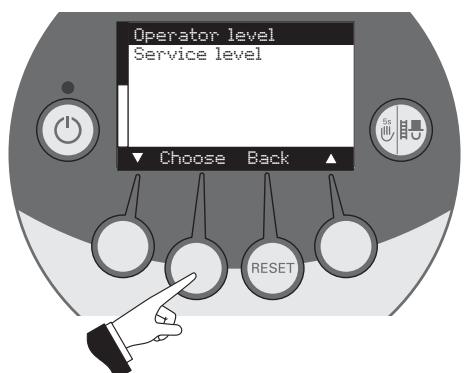


Fig. 95

The arrow buttons select the "probe switching" sub-menu – Fig. 96.

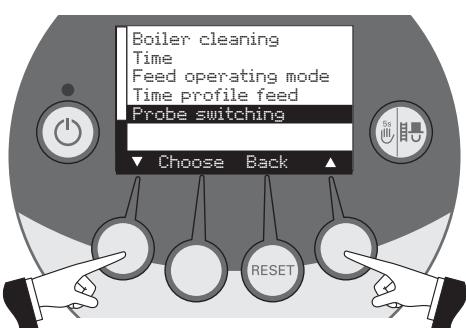


Fig. 96

Confirm the selected "probe switching" sub-menu by pressing the *Choose* button – Fig. 97.

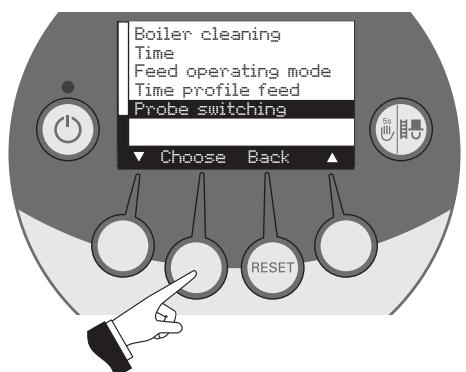
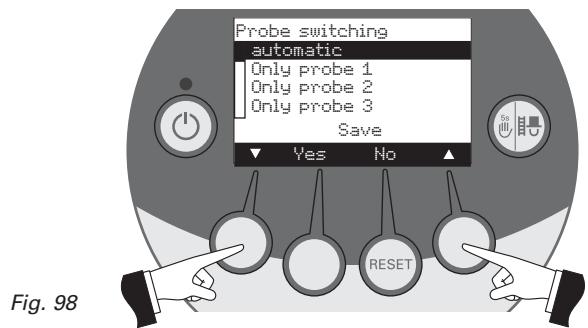


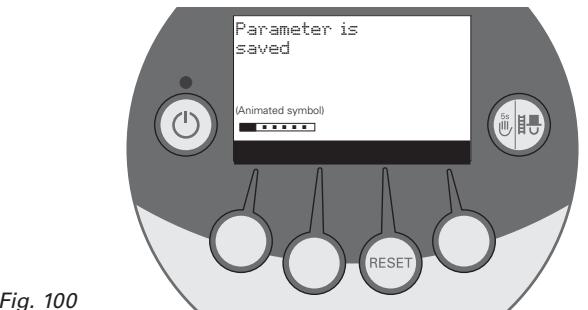
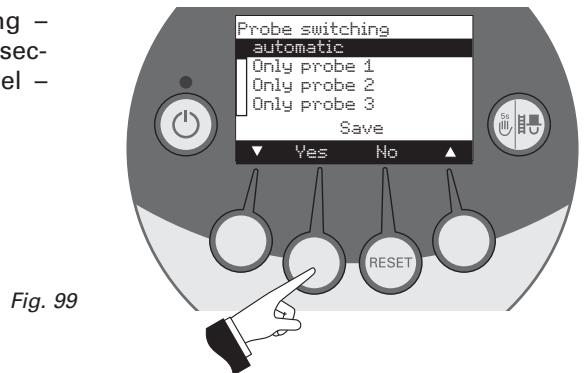
Fig. 97

# Operation

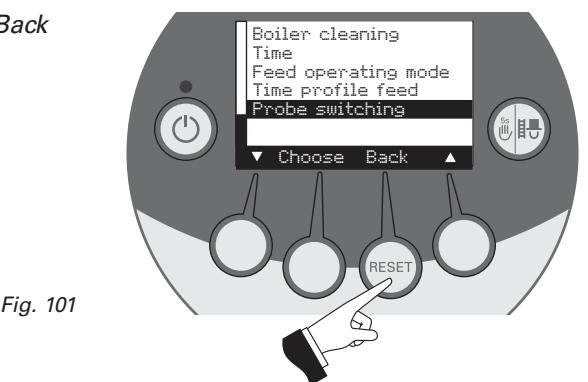
The *arrow* buttons select the probe switching – Fig. 98.



Pressing the *Yes* button saves the changed probe switching – Fig. 99. The display shows “Saving parameter value” for a few seconds (Fig. 100) and then changes back to the previous level – Fig. 101.



The menu item or sub-menu item is exited by pressing the *Back* button (Fig. 101) or after a delay of 45 seconds.



# Operation

## 2.8.2 Service level

System parameters, start-up and actuator test can be displayed, performed and/or modified on the Service level.

**i** Changes on the Service level may be performed only by trained service personnel (directions for setting, see the BioWIN Installation instructions)

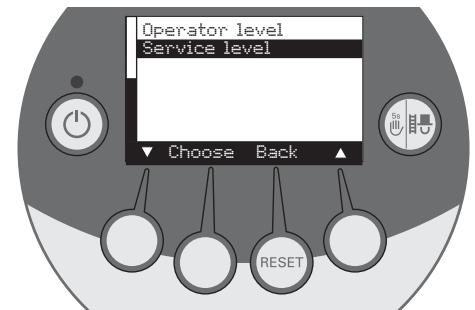


Fig. 102

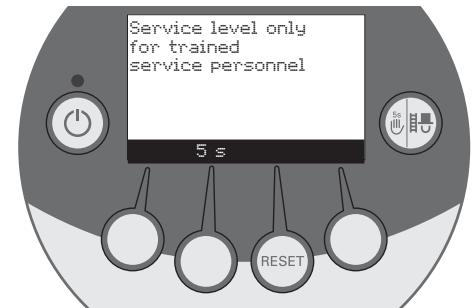


Fig. 102

The menu item or sub-menu item is exited by pressing the *Back* button (Fig. 104) or after a delay of 45 seconds.

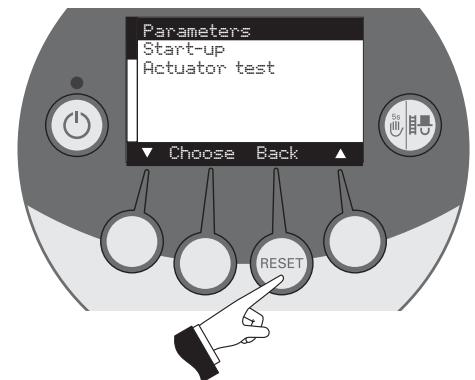


Fig. 104

# Operation

## 2.9 Heating system operation

### 2.9.1 BioWIN with MES system control

#### Switching on – automatic operation:

1. Press the ON/OFF button on the InfoWIN panel, the lighting and display are switched on, the signal lamp lights green and a self-test is performed (see also section 2.5.2). After a successful self-test and if a setpoint is transferred by the system control, the BioWIN automatically starts operation.
2. Set the operating mode switch(es) on the MES control module(s) to "Automatic operation". The system operation (setting temperatures and operating times) is performed using the analogue or digital user module (installed in the living area) – for more details, please refer to the MES and user module instructions.



Digital user module FB 5210



Analogue user module FB 5410

Fig. 105 BioWIN with MES system control



For operation of the MES and related user modules, please see their respective Operating instructions.

#### Switching off:

1. Set the operating mode to "Standby"  using the analogue or digital user module (installed in the living area).
2. If the boiler has been out of service for an extended period during the summer months, press the ON/OFF button on the InfoWIN unit.



The anti-freeze function is not active when the boiler is shut off.

#### Chimney sweeper function:

This is operated using the InfoWIN unit – see section 2.5.6.

#### Emergency operation:

In the event the system control fails, selecting the "Manual operation" mode using the MES control module  and InfoWIN unit  (see section 2.5.5) will activate emergency operation to maintain heat and hot water.

# Operation

## 2.9.2 BioWIN with REG standard control

### Switching on – automatic operation:

1. Press the ON/OFF button on the InfoWIN panel, the lighting and display are switched on, the signal lamp lights green and a self-test is performed (see also section 2.5.2). After a successful self-test and if a setpoint is transferred by the system control, the BioWIN automatically starts operation.
2. Set both manual switches to the "Automatic"  position.
3. Set the operating mode switch on the REG standard control unit RAM 786 to "Automatic operation" . The REG standard control unit RAM 786 (installed in the living area) is used to operate the system (set the desired temperature and operating times) – please refer to the separate Operating instructions.

The time must also be set on the InfoWIN (see section 2.8.1.1). This time is used for the time control of the pellet feed and for automatic heating surface cleaning.

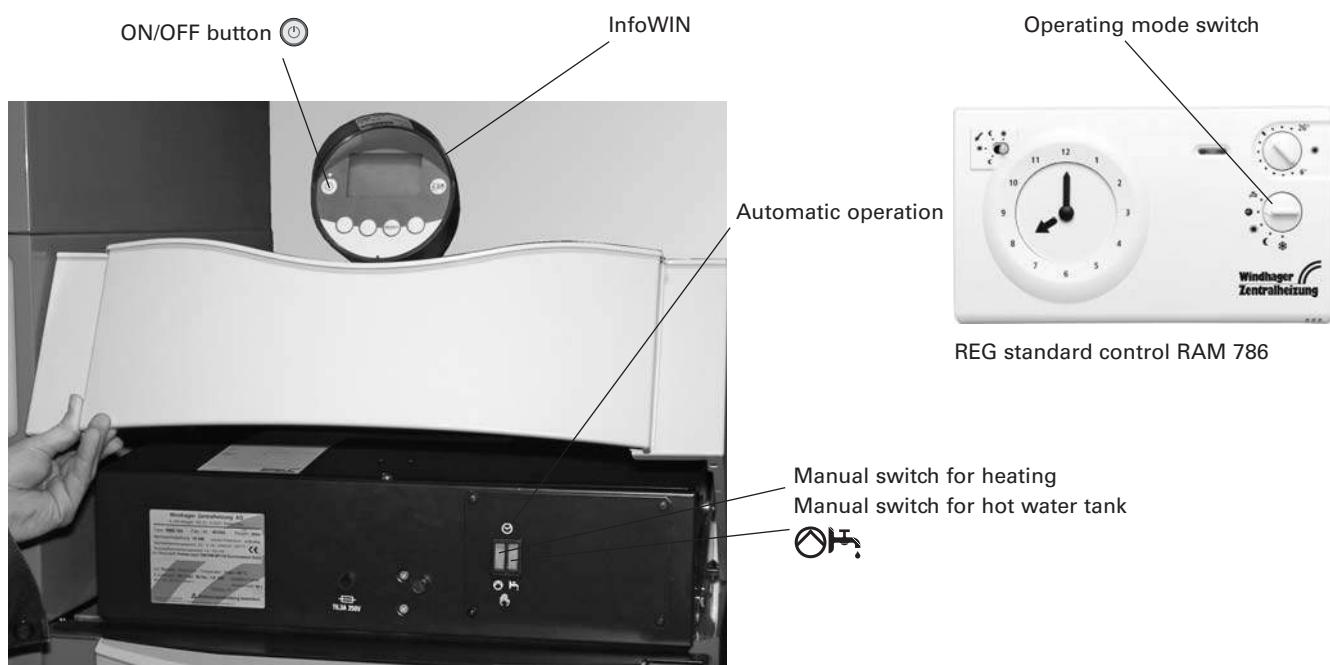


Fig. 106 BioWIN with REG standard control

### Switching off:

1. Set "Standby"  operating mode on the REG standard control unit (installed in the living area).
2. If the boiler has been out of service for an extended period during the summer months, press the ON/OFF button  on the InfoWIN unit.



The anti-freeze function is not active when the boiler is shut off.

### Chimney sweeper function:

This is operated using the InfoWIN unit – see section 2.5.6.

### Emergency operation:

If the system control fails, setting the two manual switches on the boiler control panel and using the button on the InfoWIN unit  (see section 2.5.5) will activate emergency operation to maintain heat and hot water.

# Operation

## How to switch to emergency (manual) operation

### Heating emergency operation:

1. There must be power to the boiler. The unit is switched on (otherwise, press the ON/OFF button  on the InfoWIN unit).
2. Select “Manual operation”  on the InfoWIN unit – see section 2.5.5.
3. Set the manual switch to the “Heating manual operation”  position.
4. Also set the motorised mixing valve to manual operation and select the desired flow temperature. The boiler temperature will be maintained at the selected temperature (60 to 75 °C). **Exercise caution if you have under-floor heating.**

### Emergency operation of boiler reservoir with feed pump:

1. There must be power to the boiler. The unit is switched on (otherwise, press the ON/OFF button  on the InfoWIN unit).
2. Select “Manual operation”  on the InfoWIN unit – see section 2.5.5.
3. Set the manual switch to the “Hot water tank manual operation”  position.
4. Once the desired hot water temperature has been reached, set the manual switch to the “Hot water tank automatic operation”  position.

### Emergency operation of boiler reservoir with charging valve:

1. There must be power to the boiler. The unit is switched on (otherwise, press the ON/OFF button  on the InfoWIN unit).
2. Select “Manual operation”  on the InfoWIN unit – see section 2.5.5.
3. Set both manual switches  and  to the “Manual operation” position.

# Care, cleaning and maintenance

Clean the boiler cladding and keyboard foil with a moist cloth as needed. In the event of heavy soiling, use soapy water or diluted suds (do not use strong cleaners or sharp cleaning instruments).

A clean boiler saves fuel and protects the environment. Therefore always clean your boiler as required!

Your Windhager expert PARTNER can provide you with a practical cleaning set, comprising: High-quality vacuum cleaner, magnetic flashlight, gloves, apron. This will enable you to clean more quickly and conveniently.

## 3.1 Overview of intervals between cleaning (maintenance)

The BioWIN is equipped with a cleaning and ash removal interval display. The "Clean boiler and burner" cleaning request is displayed on the InfoWIN and must be reset after cleaning/ash removal has finished – see section 2.8.1.1.

A clean boiler saves fuel and protects the environment. Therefore always clean your boiler as required when the cleaning and ash removal request is displayed.

The cleaning and ash removal intervals may be reduced or extended depending on the pellets used (e.g. ash proportion), the power consumed by the heating system (frequently switching on and off) and the boiler size of the BioWIN (10 to 26 kW).

Annual maintenance is required in addition to cleaning. This is performed by WINDHAGER Customer Service or the customer service PARTNERS and is a prerequisite of the guarantee limitations.



Note for cascade installations (installation with 2 or 3 BioWINS): When cleaning, only the boiler that is actually going to be cleaned need be shut down, the other boiler(s) may continue to operate.

Cleaning and ash removal intervals	BioWIN Klassik	BioWIN Premium	BioWIN Exklusiv
Display "Clean boiler and burner"  Information 580 Fault 390	Operate the heating surface cleaning lever Frequent use of the lever increases efficiency (see section 3.2)  Empty the ash pan (see section 3.3)  Check the combustion chamber and burner pot, clean if necessary Note: The burner only needs cleaning after every 3–4 cleaning requests. (see sections 3.5 and 3.6)  Confirm boiler and burner cleaning (see section 2.8.1.1)	Empty ash container (see section 3.4)  Check the combustion chamber and burner pot, clean if necessary (see sections 3.5 and 3.6)  Confirm boiler and burner cleaning (see section 2.8.1.1)	Empty ash container (see section 3.4)  Check the combustion chamber and burner pot, clean if necessary (see sections 3.5 and 3.6)  Confirm boiler and burner cleaning (see section 2.8.1.1)
at least once per heating season	Blower wheel/blower box (see section 3.7)  Exhaust pipe to flue (see section 3.8)  Water tank level (see section 3.9)  Reserve supply container (see section 3.10)	Blower wheel/blower box (see section 3.7)  Exhaust pipe to flue (see section 3.8)  Water tank level (see section 3.9)  Supply container and feed unit flap (see section 3.10)  Storage room/storage container (see section 3.11)	Blower wheel/blower box (see section 3.7)  Exhaust pipe to flue (see section 3.8)  Water tank level (see section 3.9)  Supply container and feed unit flap (see section 3.10)  Storage room/storage container (see section 3.11)

# Care, cleaning and maintenance

## 3.2 Cleaning heating surfaces (BioWIN Klassik and Premium)

Optimum efficiency is achieved when the heating surfaces are cleaned as often as possible using the cleaning lever.

**Note:** In the BioWIN Exklusiv, this cleaning is undertaken fully automatically several times a day).

The cleaning lever should be moved back and forth several times **before** emptying the ash pan at the latest – Fig. 107.



Fig. 107 Actuating lever for cleaning heating surfaces

## 3.3 Emptying the ash pan (BioWIN Klassik and Premium)



Do not open the combustion chamber door during operation. Always switch the boiler off first with the ON/OFF button and wait until burnout mode has finished.

- Switch off the BioWIN with the ON/OFF button on the InfoWIN (Fig. 108) and wait until the display has gone out.
- Open the combustion chamber door, turn the ash pan handle anti-clockwise – Fig. 109.
- Take out ash pan (Fig. 110) and empty.

### Assembly:

- Slide in ash pan and turn handle clockwise until stop is reached.
- Close the combustion chamber door, switch the BioWIN back on with the ON/OFF button.



Fig. 108 Switching off BioWIN



Fig. 109 Turning handle to the left



Fig. 110 Removing ash pan

# Care, cleaning and maintenance

## 3.4 Emptying ash container (BioWIN Exklusiv)

- Switch off the BioWIN with the ON/OFF button on the InfoWIN (Fig. 111) and wait until the display has gone out.
- Pull handle on ash container out until stop is reached so that the side openings in the ash container are sealed – Fig. 112.
- Loosen the bottom right bracket fastener (Fig. 113), slide container slightly to the left and pull out – Figs. 114, 115.
- Emptying ash container – Fig. 116.

### Assembly:

- Refit container by working through these steps in reverse order.  
**Important:** Slide ash container handle all the way back in.



When reinstalling the ash container and cover, check they are in the correct position and are sealed – danger of inleaked air!



Fig. 111 Switching off BioWIN

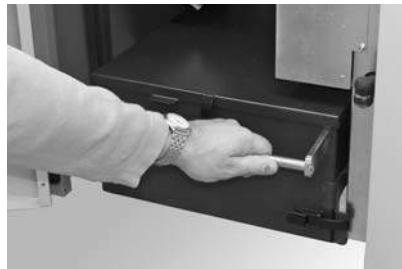


Fig. 112 Pulling out handle



Fig. 113 Opening the bracket fastener



Fig. 114 Moving container slightly to the left



Fig. 115 Taking out container

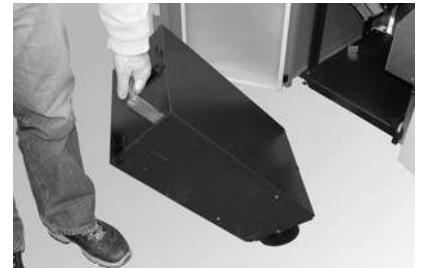


Fig. 116 Emptying ash container

# Care, cleaning and maintenance

## 3.5 Combustion chamber (baffle plate, thermocontrol sensor)



Do not open the combustion chamber door during operation. Always switch the boiler off first with the ON/OFF button and wait until burnout mode has finished. It is essential to let the combustion chamber cool down before cleaning.

- Switch off the BioWIN with the ON/OFF button on the InfoWIN (Fig. 117) and wait until the display has gone out.
- Raise baffle plate at rear and guide it out at a downwards pointing angle – Fig. 118, Taking out the baffle plate and removing fly ash
- If necessary, remove fly ash from the thermocontrol sensor. The thermocontrol sensor is located in the combustion chamber behind the baffle plate – Fig. 119.

### Assembly:

By working through these steps in reverse order.



Fig. 117 Switching off BioWIN



Fig. 118 Cleaning the baffle plate

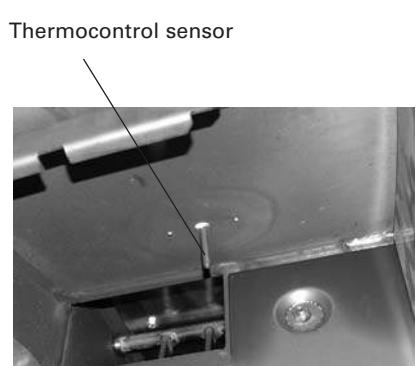


Fig. 119 Cleaning the thermocontrol sensor

## 3.6 Burner pot



Do not open the combustion chamber door during operation. Always switch the boiler off first with the ON/OFF button and wait until burnout mode has finished. It is essential to let the boiler cool down before cleaning.



Before cleaning with a vacuum cleaner, check that there are no longer any embers in the combustion residue!

If the level of combustion residue in the burner pot is more than 4 cm above the grate plate, perform cleaning as follows:

- Lift out the cone using the removal tool – Figs. 120, 122, 124.
- Use the spatula to scrape off the deposits from all sides of the cone, however in particular on the underside.
- Vacuum out the burner pot, remove the primary air pin and carefully clean the holes with a small screwdriver or drill bit if necessary (holes must be clear).
- Lift the grate plate from below using the removal tool and remove it (Figs. 121, 123, 135), scrape off ash residues from the top and bottom of the grate plate and from the hole in the middle using the spatula to clean it.
- Use the spatula to scrape the edges out clean all round the inside of the burner pot at the bottom. All secondary air holes must be clear, clean them with a small screwdriver or drill bit if necessary.
- Remove combustion residues from the burner pot and the grate with a spatula and clean with a vacuum cleaner. Vacuum the ash out of the primary air tube (in the middle of the burner pot).



The glow ignition is located in the primary air tube so avoid shaking the burner pot violently – risk of breakage!

# Care, cleaning and maintenance



**BioWIN 100**

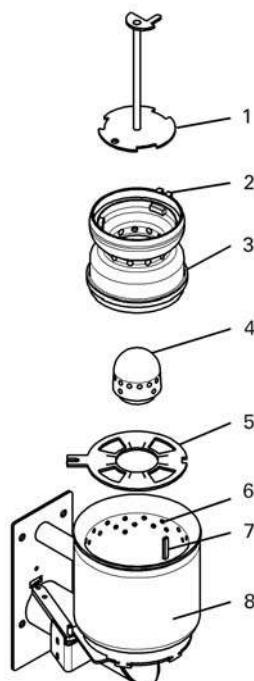


Fig. 120 **BioWIN 100**

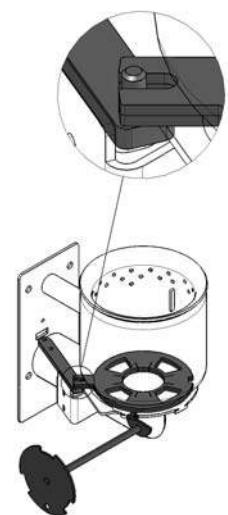
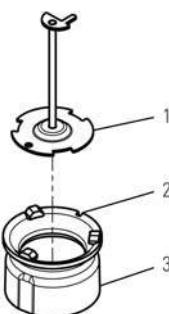


Fig. 121



**BioWIN 150**

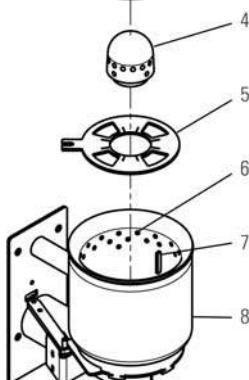


Fig. 122 **BioWIN 150**

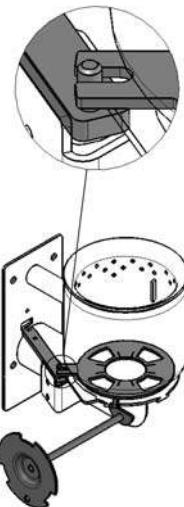


Fig. 123



**BioWIN 210/260**

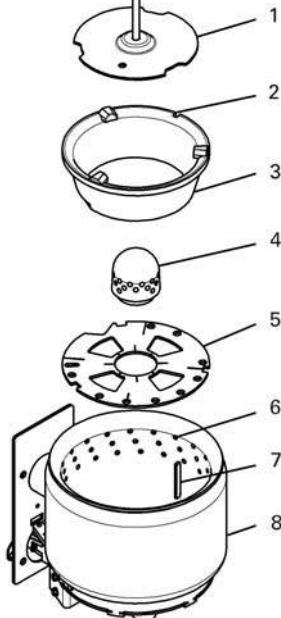


Fig. 124 **BioWIN 210/260**

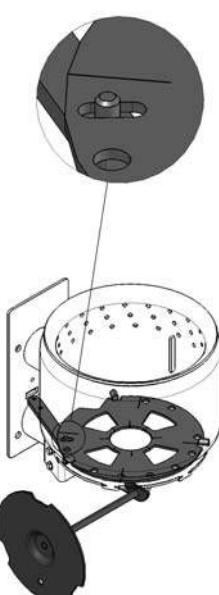


Fig. 125

- 1 Removal tool
- 2 Guide groove for the lock in the burner pot
- 3 Cone
- 4 Primary air pin
- 5 Grate plate
- 6 Secondary air holes
- 7 Lock for cone
- 8 Burner pot

## Assembly:

- Insert the grate plate, making sure the projection/opening of the grate plate projects through the driver of the driving rod and rests fully on the bottom grate plate – Figs. 121, 123, 125.
- Place the cone into the burner pot using the removal tool. The groove in the cone must project into the lock of the burner – Figs. 120, 122, 124.

**Important:** Before inserting the primary air pin, once again vacuum out the primary air tube in the middle of the burner pot. Make sure there is no debris in the tube (damage to the ignition element!).

- Insert the primary air pin (on lock = note anti-twist device!).

# Care, cleaning and maintenance

## 3.7 Blower wheel, blower box

The blower is automatically checked and cleaned as part of the maintenance by WINDHAGER Customer Service or the customer service partner.

- Switch off the BioWIN with the ON/OFF button on the InfoWIN (Fig. 126) and wait until the display has gone out.
- Fold up complete control panel – Fig. 127.
- Disconnect the blower plug – Fig. 128.



Fig. 126 Switching off BioWIN

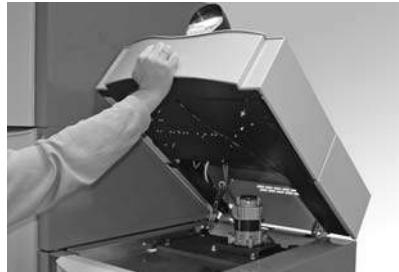


Fig. 127 Folding up control panel



Fig. 128 Disconnecting the blower plug

- Unscrew four wing nuts from the blower box and raise the complete blower unit – Fig. 29.
- Clean fly ash with a vacuum cleaner.
- Raise blower box at front and take out – Fig. 130.
- Vacuum top parts of coasting surface or use a cleaning brush to clean them – Fig. 131.



Fig. 129 Unscrewing blower unit



Fig. 130 Taking out blower box



Fig. 131 Cleaning the coasting surfaces

- Clean the blower wheel using a spatula – Fig. 132.

### Assembly:

By working through these steps in reverse order.

- Insert blower box.
- Mount the blower unit. **Important:** Tighten the wing nuts diagonally across so that the blower cover makes a good seal.
- Connect the blower plug.
- Raise locking arm for control panel (Fig. 133) and fold down control panel.



Fig. 132 Cleaning the blower wheel



Fig. 133 Loosening locking arm

# Care, cleaning and maintenance

## 3.8 Exhaust pipe to flue

Check the exhaust pipe to the flue for dirt and clean at least once a year.

## 3.9 Water tank level

Regularly check the water tank level and top up with water if necessary. Water level must not fall below the min. mark – Fig. 136.

- To fill the water tank, slide up front cladding on the feed unit and remove – Fig. 134.
- Remove plug from water tank and top up – Figs. 135, 136.

### Assembly:

By working through these steps in reverse order.



Fig. 134 Removing the cladding

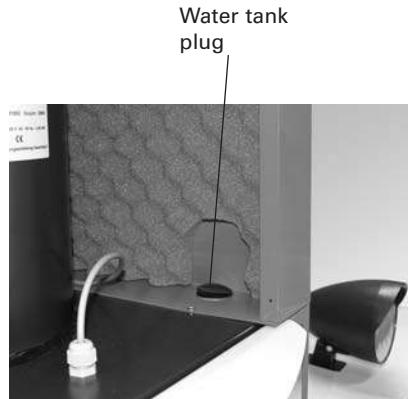


Fig. 135 Water tank plug



Fig. 136 Filling water container

## Care, cleaning and maintenance

### 3.10 Cleaning supply container (BioWIN Klassik, Premium and Exclusiv) and feed unit flap (BioWIN Premium and Exclusiv)

It is necessary to clean the reserve supply container and/or flap in the feed unit if too much dust has collected or there are foreign bodies in the reserve supply container.

#### Cleaning and/or checking the feed unit flap:

- Switch off the BioWIN with the ON/OFF button on the InfoWIN (Fig. 137) and wait until the display has gone out.
- Open the cladding door.
- Place a container for the pellet at the front.
- Remove both knurled screws and carefully take off the bottom inspection cover. Pellets may gush out depending on how high a level of them there is - Fig. 138.
- Remove pellets and dust using from reserve supply container.
- Remove dust in feed unit and on flap, check flap for ease of movement – Fig. 139. Full surface of flap must make contact with feed unit. Telltale on proximity switch must light up brightly when flap is closed.

#### Assembly:

By working through these steps in reverse order.



Fig. 137 Switching off BioWIN

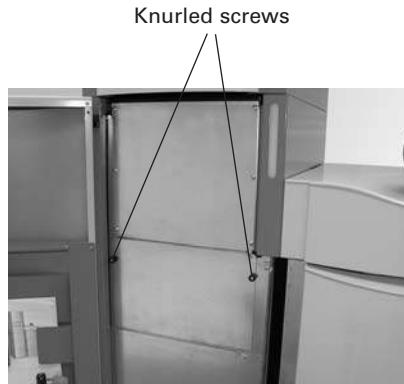


Fig. 138 Removing the knurled screws

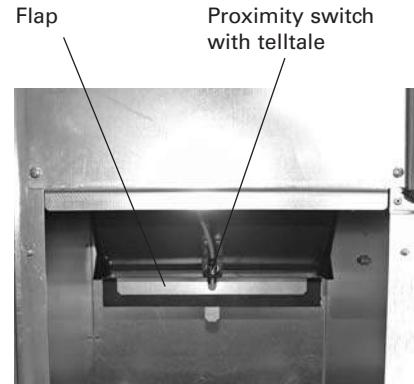


Fig. 139 Feed unit flap

### 3.11 Pellet storage room or storage container (BioWIN Premium and Exclusiv)



When entering the pellet storage room or storage container do not stand on the pellets around the suction probe.

#### Before filling the pellet storage room or storage container, check the following:

- whether the storage room is free of foreign bodies.
- whether a lot of dust has settled on the floor over time.  
Please note: A layer of dust on top of the pellets is normal because dust present migrates to the surface when the pellets gush out during removal.
- whether pellets have swelled up against the wall if the storage room is not fully dry.

**Tip 1:** Pellet dust is totally organic and can therefore be disposed of as organic waste.

**Tip 2:** Leading pellet suppliers recommend fully emptying the storage room every 2–3 years. You can deactivate automatic changeover between the three suction probes using the InfoWIN (see section 2.8.1.4). This allows you to fully empty the storage room for one probe (i.e. 1/3 of the storage room). You can then continue heating with the other two suction probes. If you perform this task every year with a different want, you will “replace” your entire supply of pellets every 3 years.

# Troubleshooting

The BioWIN pellet boiler is self-monitoring during operation. All deviations from normal operation are displayed on the InfoWIN by information, fault or alarm messages. If one of these messages appears, the LED lights up red, an information, fault or alarm symbol flashes, an information code is displayed along with a brief description in full text – Fig. 140.

Pressing the *Info* button (Fig. 140) displays the related information text (Fig. 140). To exit the information text menu, press the *Back* button (Fig. 141) or wait 45 seconds and the information, fault or alarm message is displayed again – Fig. 140.

With almost all messages, it is necessary to press the *Reset* button after rectifying the cause of the information, fault or alarm message. In these cases, “Reset” is displayed in the menu line – Fig. 140.

If “Reset” is not displayed in the menu line, the boiler starts operating again automatically after the cause of the information, fault or alarm message has been rectified.

Pressing the *Test* button changes to the actuator test immediately. This function is only intended for trained service personnel (directions for setting, see the BioWIN installation instructions).

 All safety functions are deactivated during the actuator test!

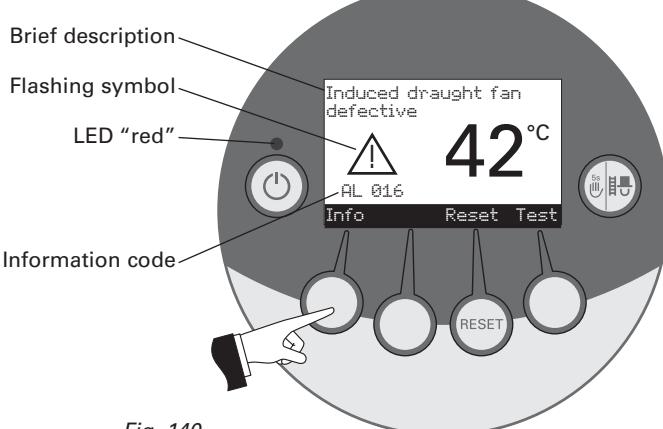


Fig. 140

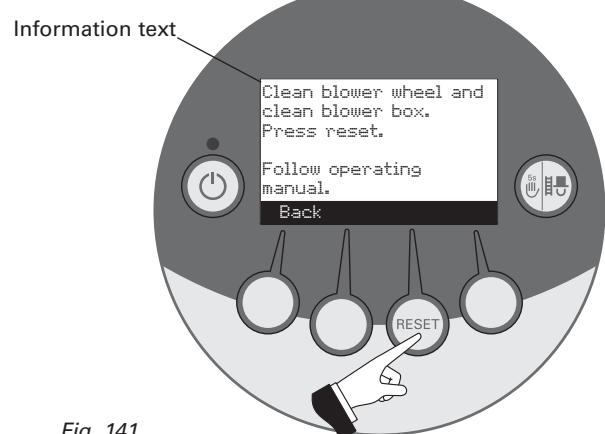


Fig. 141

Pressing the *Back* button (Fig. 142) exits the actuator test.

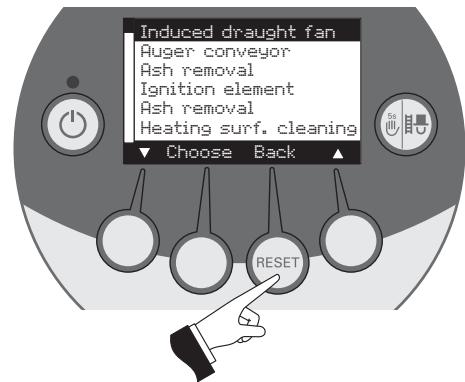


Fig. 142

If you wish to call WINDHAGER Customer Service or your customer service PARTNER due to a malfunction, please first make a note of the following data from the rating plate:

- Model
- Factory number
- Year of manufacture
- Fault or alarm message

The rating plate is located on the front of the control panel under the cladding cover – Fig. 143.



Fig. 143 Rating plate

# Troubleshooting

## 4.1 No display on InfoWIN

Code	Display on InfoWIN	Cause/remedy
-	<b>No display, LED not lit up</b> Boiler is off, cannot be switched on with the ON/OFF button.	a) No electricity, check the cable to the device and the building fuse. b) No electricity, device fuse blown – check and replace if necessary - see Fig. 144. c) Mains power plug loose or poorly or not connected together during installation – check and connect together firmly if necessary - Fig. 144 d) Inform Windhager Customer Service or a heating technician.

## 4.2 IN – messages

Code	Display on InfoWIN	Cause/remedy
IN 581	<b>Re-fill fuel</b> Integral fuel hopper is almost empty. Re-fill pellets.	Boiler continues to heat until the remaining fuel quantity has been consumed. a) BioWIN Klassik (without feed): Fill fuel into the fuel container (see section 2.3). b) BioWIN Premium/Exklusiv (with feed): Feed is switched off in "feed operating mode" (see section 2.8.1.3). In "Feed operating mode" menu item, set to "with enable time", "with start time" or "without time control".
IN 582	<b>Integral fuel hopper empty</b> Integral fuel hopper empty. Top up pellets. Burner is locked.	a) BioWIN Klassik (without feed): Fill fuel into the fuel container (see section 2.3). b) BioWIN Premium/Exklusiv (with feed): Feed is switched off in "feed operating mode" (see section 2.8.1.3). In "Feed operating mode" menu item, set to "with enable time", "with start time" or "without time control".
IN 590	<b>Remove ash Confirm cleaning</b> Remove ash, clean boiler if necessary, confirm cleaning.	Boiler and burner are still operating. Note indicating that the pellet boiler must be cleaned in the next 50 operating hours (see sections 3.2 to 3.6). Following cleaning, cleaning must be confirmed on the InfoWIN operator level (see section 2.8.1.1).
IN 595	<b>Combustion chamber door open</b> Combustion chamber door is open, burner locked.	Close the combustion chamber door.

## 4.3 FE – messages

Code	Display on InfoWIN	Cause/remedy
FE 238	<b>Feed is not sucking any pellets</b> Check pellet supply in storage room and feed hose. Press reset.	No pellet feed is possible. The boiler does not operate. a) No pellets at the suction probe – Set "probe switching" to "automated" or select another probe (see section 2.8.1.5). Press the Reset button b) Feed hose blocked at the cyclone intake or entry to the changeover unit – clear it. Press the Reset button. c) Inform Windhager Customer Service or a heating technician. <b>Emergency operation:</b> Switch off the feed unit (see section 2.8.1.3). Fill the reserve supply container with pellets by hand, boiler is allowed to continue operating without feed.

# Troubleshooting

## 4.3 FE – messages

Code	Display on InfoWIN	Cause/remedy
FE 239	<p><b>Probe switching defective</b> Check the changeover unit. Press reset.</p>	<p>No pellet feed is possible. The boiler does not operate. Press the Reset button. If the fault reoccurs after a reset, inform Windhager Customer Service or a heating technician.</p> <p><b>Emergency operation:</b> Switch off the feed unit (see section 2.8.1.3). Fill the reserve supply container with pellets by hand, boiler is allowed to continue operating without feed.</p>
FE 281	<p><b>Flue gas temperature sensor defective</b> Check the flue gas temperature sensor and connections.</p>	<p>It is not possible to display the flue gas temperature. No effect on operation. Replace the flue gas temperature sensor, inform Windhager Customer Service or a heating technician.</p>
FE 381	<p><b>Integral fuel hopper empty</b> Time programme blocking feed. Change enable time in menu/operator level.</p>	<p>Feed is outside the enable time. Enable time for the feed has been set too short, which means the pellets in the reserve supply container are used up and the feed is blocked. Extend the enable time for the feed in the "Feed operating mode" menu item (see section 2.8.1.3) or operate "with start time" or "without time control".</p>
FE 382	<p><b>Pellet feed flap does not close</b> Check the flap and switch in the feed unit. Press reset.</p>	<p>The boiler does not operate.</p> <ol style="list-style-type: none"> <li>Flap not shutting – clean flap (see section 3.10). It must be making full contact with the feed unit. Telltale on proximity switch of feed unit must light up brightly when flap is closed. Press the Reset button.</li> <li>Mains plug on feed unit is loose or not snapped in, connect up plug firmly – Fig. 144.</li> <li>Fill level switch (proximity switch) in the reserve supply container defective – inform Windhager Customer Service or a heating technician.</li> <li>Inform Windhager Customer Service or a heating technician.</li> </ol> <p><b>Emergency operation:</b> Switch off the feed unit (see section 2.8.1.3). Fill the reserve supply container with pellets by hand, boiler is allowed to continue operating without feed.</p>
FE 390	<p><b>Remove ash Confirm cleaning</b> Remove ash, clean boiler if necessary, confirm cleaning.</p>	<p>Boiler and burner are still operating. The pellet boiler must be cleaned (see sections 3.2 to 3.6). Following cleaning, cleaning must be confirmed on the InfoWIN operator level (see section 2.8.1.1).</p>

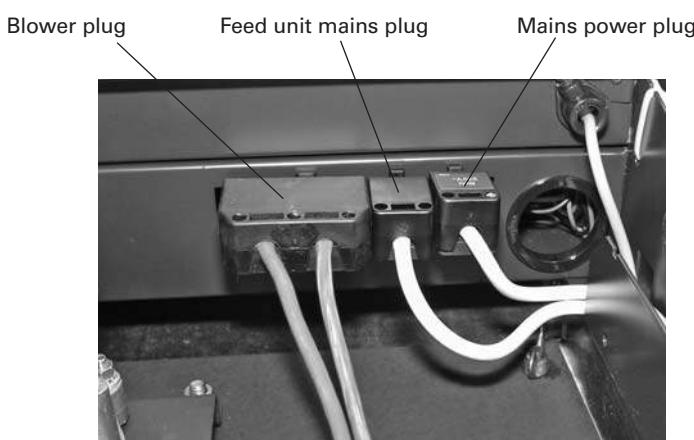


Fig. 144 Plug – rear of control panel

# Troubleshooting

## 4.4 AL – messages

Code	Display on InfoWIN	Cause/remedy
AL 005	<p><b>Ash removal defective</b> Ash removal defective or sticking. Cleaning the burner pot. Press reset.</p>	<p>Ash removal motor no longer moves or no longer reaches the end position, boiler switches to burnout mode.</p> <p>a) Burner contamination; close combustion chamber doors, press reset button; once the alarm message is rectified, clean the burner pot as described in section 3.6.</p> <p> The glow ignition is located in the primary air tube so avoid shaking the burner pot violently – risk of breakage!</p> <p>If the alarm message remains active, clean the burner pot as described in section 3.6. <b>Note:</b> Grate plate at top can only be raised and removed when closed. If the grate plate is not fully closed, scrape off residue in burner top with spatula/screwdriver and vacuum. Close combustion chamber door, press reset button, if the alarm message remains in place, repeat the process or inform Windhager Customer Service or a heating technician.</p> <p>b) Grate plate not inserted correctly or check correct installation position (see section 3.6.).</p> <p>c) Motor for ash removal defective, inform Windhager Customer Service or a heating technician.</p> <p>d) Limit switch defective, inform Windhager Customer Service or a heating technician.</p>
AL 006	<p><b>Auger conveyor motor defective</b> Auger conveyor motor defective Press reset.</p>	<p>Boiler enters burnout mode, Induced draught fan is stopped immediately.</p> <p>a) Press the Reset button. If the malfunction recurs immediately after a short period, or recurs at regular intervals, contact Windhager Customer Service or your heating technician.</p> <p>b) Renew the auger conveyor motor, inform Windhager Customer Service or a heating technician.</p>
AL 016	<p><b>Induced draught fan defective</b> Clean blower wheel and clean blower box. Press reset.</p>	<p>The actual speed is different from the nominal speed. The boiler switches to burnout mode.</p> <p>a) The blower wheel and blower box are dirty, clean (see section 3.7). Press the Reset button.</p> <p>b) Blower plug is loose or not snapped in, connect up plug firmly – Fig. 144.</p> <p>c) Renew the Induced draught fan motor, inform Windhager Customer Service or a heating technician.</p>
AL 037	<p><b>Pellet feed flap does not open after feeding</b> Check the flap in the feed unit. Press reset.</p>	<p>No pellet feed is possible. The boiler does not operate.</p> <p>a) Flap in feed unit not opening automatically – clean flap and check for ease of movement (see section 3.10). Press the Reset button.</p> <p>b) Feed unit suction turbine no longer switching off, disconnect mains plug from feed unit (see installation instructions in Service and repair work section). Inform Windhager Customer Service or a heating technician.</p> <p><b>Emergency operation:</b> Switch off the feed unit (see section 2.8.1.2). Fill the reserve supply container with pellets by hand, boiler is allowed to continue operating without feed.</p>
AL 062	<p><b>Air intake/exhaust flap defective</b> Air intake/exhaust flap defective or not opening. Check flap. Press reset.</p>	<p>External air choke (optional) does not open.</p> <p>a) Check the air choke, press the Reset button.</p> <p>b) Inform Windhager Customer Service or a heating technician.</p>
AL 071	<p><b>Safety/emergency switch open</b> Check switch position of safety / emergency switches.</p>	<p>Boiler enters burnout mode, however the blower does not run. Switch on emergency heating/OFF switch.</p>

# Troubleshooting

## 4.4 AL – messages

Code	Display on InfoWIN	Cause/remedy
AL 076	<b>Boiler sensor defective</b> Check the boiler sensor and connections. Press reset.	The boiler switches to burnout mode. a) Press the Reset button. If the malfunction recurs immediately after a short period, or recurs at regular intervals, contact Windhager Customer Service or your heating technician. b) Renew the boiler sensor, inform Windhager Customer Service or a heating technician.
AL 078	<b>Thermocontrol sensor defective</b> Check the thermocontrol sensor and connections. Press reset.	The boiler switches to burnout mode. a) Press the Reset button. If the malfunction recurs immediately after a short period, or recurs at regular intervals, contact Windhager Customer Service or your heating technician. b) Renew the thermocontrol sensor, inform Windhager Customer Service or a heating technician.
AL 114	<b>Switch/buffer sensor defective</b> Check the switch/buffer sensor and connections on the cascade module.	The boiler switches to burnout mode. a) Check the switch/buffer sensor and connections on the cascade module. b) Renew switch/buffer sensor, inform Windhager Customer Service or a heating technician.
AL 128	<b>No flame formation in control mode</b> Clean boiler and burner. Press reset.	The flame goes out in modulation mode. The boiler switches to burnout mode. a) Clean the burner and the boiler. Check the exhaust pipe to the flue and clean it if necessary. Press the Reset button. b) Burner component (e.g. grate disc) not inserted correctly after cleaning – check installation position. c) Check the ash container (see section 3.4) and cover are in the correct position and are sealed – danger of inleaked air. Press the Reset button. d) An excessive amount of dust in the pellets is emptying the auger. (However, in the intervening period, pellet feed may have been started) ⇒ Empty the reserve supply container completely (see section 3.10) and remove the dust. The alarm message AL 171 may light on up to 2 occasions until the boiler starts operating again. Acknowledge with the Reset button. e) Auger conveyor jammed due to a foreign body, clean the reserve supply container (see section 3.10) and remove the foreign body through the opening above the auger, refill the reserve supply container. The alarm message AL 171 may light on up to 2 occasions until the boiler starts operating again. Acknowledge with the Reset button. f) Inform Windhager Customer Service or a heating technician.
AL 133	<b>Safety temperature shut-down</b> Check the system and filling pressure. Press Release button on boiler.	Boiler temperature is above 100 °C, boiler enters burnout mode, Induced draught fan is switched off immediately. a) Check the water level or pressure in the heating system – re-fill, bleed the air. b) Air in the heating system – bleed air. c) The heat pump or boiler feed pump is sticking or is defective – start pump manually or have it repaired.  Once the boiler water temperature falls below 90 °C, remove the cover, press the Release button of the safety thermostat B7 firmly – Fig. 145.  If the malfunction occurs after a short period, or recurs at regular intervals, contact Windhager Customer Service or your heating technician.

# Troubleshooting

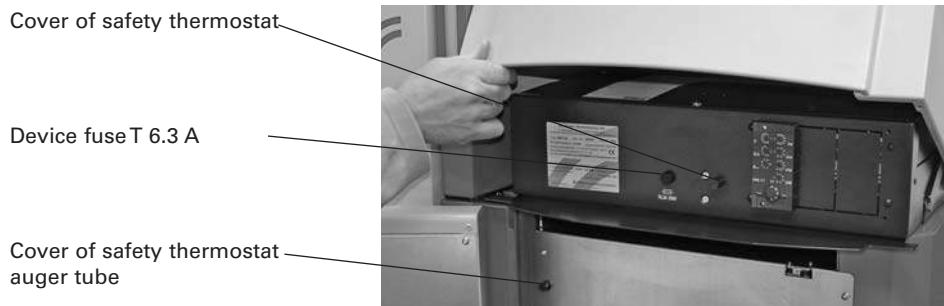


Fig. 145 BioWIN control panel cladding raised, combustion chamber door open

## 4.4 AL – messages

Code	Display on InfoWIN	Cause/remedy
AL 135	<b>Excess temperature on auger tube</b> Check fill level in water tank. Press release button behind comb. chamber door.	Boiler enters burnout mode and transports pellets into combustion chamber. a) Check level in water tank (see section 3.9), if there is no water in the tank (burn-back safeguard triggered) inform Windhager Customer Service. b) Check the burner, remove all pellets from the burner pot. c) Open combustion chamber door, remove the cover from the safety thermostat auger tube press the Release button firmly (see Fig. 145). If the ignition does not function first time (AL 171), press the Reset button (pellets in the auger conveyor will have been damaged due to the higher temperature).
AL 171	<b>Maximum heating time exceeded</b> Clean burner pot. Press reset.	No flame formation when heating up. Heating-up procedure is cancelled. a) Clean the burner pot (see section 3.6), empty the ash pan or ash container (see section 3.3). Confirm cleaning (see section 2.8.1.1). Press the Reset button. b) An excessive amount of dust in the pellets is emptying the auger. (However, in the intervening period, pellet feed may have been started) ⇒ Empty the reserve supply container completely (see section 3.10) and remove the dust. The alarm message AL 171 may light on up to 2 occasions until the boiler starts operating again. Acknowledge with the Reset button. c) Auger conveyor jammed due to a foreign body, clean the reserve supply container (see section 3.10) and remove the foreign body through the opening above the auger, refill the reserve supply container. The alarm message AL 171 may light on up to 2 occasions until the boiler starts operating again. Acknowledge with the Reset button. d) Ignition defective, inform Windhager Customer Service or a heating technician.
AL 187	<b>No communication with firing automate</b> Check linkage of firing automate and connections. Press reset.	The boiler switches to burnout mode. a) Check the connection cable or InfoWIN plug connection to the firing automate, inform Windhager Customer Service or a heating technician. b) Connect the firing automate, inform Windhager Customer Service or a heating technician.
AL 188	<b>Internal error occurred</b> <b>ErrorCode 188 xxx</b> <b>Current TableID 4 xxx</b>	Internal communication error. The boiler switches to burnout mode. A reset is performed automatically after 1 minute if this error occurs. If the malfunction occurs after a short period, or recurs at regular intervals, contact Windhager Customer Service or your heating technician.
AL 195	<b>Combustion chamber door opened during operation</b> Door is not allowed to be opened unless the burner is switched off. Close the door. Press reset.	The boiler switches to burnout mode. Close the outer door. Door may only be opened if the burner is switched off. Press the Reset button. <b>Failure to observe this point may result in components in the combustion chamber be damaged due to peaks in temperature!</b>

# Declaration of conformity

for the BioWIN pellet boiler series

Issued by: WINDHAGER ZENTRALHEIZUNG Technik GmbH  
Anton-Windhager-Strasse 20  
A-5201 Seekirchen

Subject of the declaration:  
BioWIN pellet boiler series in the configuration variants BWK, BWP, BWE

The appliances comply with the requirements in the following documents:

Document no.	Title	Standard	Edition
98/37 EC	Machinery Directive	EN 303-5	1999
73/23 EEC	Low-Voltage Directive	EN 60335-1	2001
89/336 EEC	EMC Directive	EN 61000-6-1	2001
		EN 61000-6-3	2001

Seekirchen, 28.3.2006

WINDHAGER ZENTRALHEIZUNG  
Technik GmbH



Johann Thalmaier, Board of Directors

# Guarantee and warranty limitations

The guarantee and warranty limitations require that the boiler and related accessories be properly installed and started up by WINDHAGER Customer Service or Customer Service PARTNER; otherwise the manufacturer's guarantee will not be honoured.

Malfunctions resulting from improper operation or adjustment as well as use of poor or not recommended fuel types are not covered by the guarantee and warranty. Further, the warranty shall be void if equipment other than those provided by WINDHAGER are installed. The special warranty restrictions for your system are available in the "Warranty Conditions" folder supplied with your boiler.



Start-up and regular maintenance following the terms of the "Warranty Conditions" will assure safe, environmentally friendly and economical operation of your system. We recommend that you obtain a maintenance service contract.

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